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PESTICIDE MANUAL

PART III: SPECIFICATIONS

Price $3.00

R. VON RÜMKER

F. HORAY

DEPARTMENT OF STATE

AGENCY FOR INTERNATIONAL DEVELOPMENT

P E S T I C I D E M A N U A L

PART I : SAFE HANDLING AND USE OF PESTICIDES

PART II : BASIC INFORMATION ON
THIRTY-FIVE PESTICIDE CHEMICALS

PART III : SPECIFICATIONS

By

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and

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RvR CONSULTANTS
P. O. B. 553
Shawnee Mission, Kansas 66201

August, 1972

This Manual was prepared under Subcontract No. HG 665290 with the Regents of the University of California as a part of Contract No. AID/csd 3296.

PREFACE.

This Manual was prepared under the auspices of the University of California/AID Pest Management and Related Environmental Protection Project, Contract No. AID/csd 3296, Dr. Ray F. Smith, Project Director. The Project's Panel on Pesticides under the Chairmanship of Dr. Gordon E. Guyer provided the outline for the Manual, supervised its preparation, reviewed the draft, and furnished important data, literature references and other inputs. The authors gratefully acknowledge these contributions, and the guidance and encouragement received from Dr.'s Gordon E. Guyer, Ray F. Smith, David E. Schlegel, John E. Davies, Virgil H. Freed, James G. Horsfall, Allen B. Lemmon, and from Dr. W. H. Garman, AID.

Appreciation is also expressed to the pesticide manufacturers who contributed data and information on their products.

We are grateful to Dr. R. de B. Ashworth, Chairman of CIPAC, Harpenden, Herts., Great Britain, and to Dr. A. V. Adam, Pesticides Officer, FAO, Rome, Italy for their assistance in regard to Part III (Specifications) of the Manual.

Rosmarie von Rümker

Freda Horay

Shawnee Mission, Kansas

August, 1972

T A B L E O F C O N T E N T S

P E S T I C I D E M A N U A L

PART III: SPECIFICATIONS

T A B L E O F C O N T E N T S

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DEPARTMENT OF STATE

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P E S T I C I D E M A N U A L

PART III: SPECIFICATIONS

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PREFACE.

The pesticide specifications in this part of the Pesticide Manual were developed in close cooperation with AID; the University of California/AID Pest Management and Related Environmental Protection Project and its Panel on Pesticides; the Food and Agriculture Organization of the United Nations (FAO), Plant Production and Protection Division, Plant Protection Service; the FAO Working Party of Experts on the Official Control of Pesticides: Section B (Specifications); the Collaborative International Pesticides Analytical Council Limited (CIPAC); and the manufacturers of the products concerned.

RvR Consultants gratefully acknowledge the many contributions made by these organizations and express their thanks and appreciation especially to Dr. R. F. Smith, Project Director, and Dr. G. E. Guyer, Chairman of the Pesticides Panel of the UC/AID Pest Management Project; Dr. W. H. Garman, AID, Technical Assistance Bureau; Dr. A. V. Adam, Pesticides Officer, FAO, Rome, Italy; and Dr. R. de B. Ashworth, Chairman of the FAO Working Party of Experts on the Official Control of Pesticides: Section B (Specifications), and Chairman of CIPAC, Plant Pathology

Laboratory, Ministry of Agriculture, Fisheries and Food, Hatching Green, Harpenden, Herts, United Kingdom.

We are grateful to FAO for permission to reproduce copyrighted material and drafts, and we recognize the contributions made by the Ministry of Agriculture, Fisheries and Food of the United Kingdom to the development of many of the specifications included in this part of the Manual.

R. von Rümker

F. Horay

INTRODUCTION.

Specifications for pesticides are needed to provide both the buyer and the seller of pesticides with reliable quality standards and to assure, as far as possible, that pesticides complying with such specifications are suitable for the purpose(s) for which they are to be used.

The Food and Agriculture Organization of the United Nations (FAO) in 1963 set up an FAO Working Party of Experts on the Official Control of Pesticides. Section B (Specifications) of this Working Party is responsible for the development of specifications for technical active ingredients and formulations of agricultural pesticides which are then published by FAO. The procedures by which such specifications are developed are set forth in the "Manual on the Use of FAO Specifications for Plant Protection Products", FAO Agricultural Development Paper No. 93, Rome, 1971.

FAO Pesticide Specifications rely on methods of analysis and quality control techniques developed by the Collaborative International Pesticides Analytical Council Ltd. (CIPAC), and published in the CIPAC Handbook (W. Heffer & Sons Ltd., Cambridge, United Kingdom). The FAO Specifications and the relevant CIPAC methods of

analysis are internationally recognized and accepted and are therefore used by the U. S. Agency for International Development (AID).

There are three types of specifications:

1. Specifications designated "FAO Specification", followed by a code number. These are specifications developed and published or soon to be published by FAO and included in this Manual by permission from FAO.
2. Specifications designated as "Provisional Specification", and including an FAO code number in the title. These are specifications developed and to be published by FAO which are included in this Manual by permission from FAO. These specifications will be in effect until they are revised, or replaced by published FAO specifications (Item 1 above).

.3 Specifications designated "Provisional Specification", without a code number. These are provisional AID specifications, drawn up in the FAO format, which will be in effect until they are revised, or until FAO will have developed and published specifications for the product(s) concerned.

The specifications include the following physical and chemical properties

Description: color, physical state;

Active ingredient: content, incl. permitted tolerances; identity;

Impurities: acidity, alkalinity;
insolubles;
water;
other critical impurities;

Physical properties, as applicable, -

-for dry products: particle size and range;
suspensibility;
wettability;
foaming;
dustiness;

-for liquid products: emulsion stability;
re-emulsification;
miscibility;

Storage stability: low temperature stability;
heat stability;

Containers: stability, performance requirements.

Allowable variations in analytical resuls (i.e., tolerances in content of active ingredient) are intended to cover reasonable variations in content of active ingredient during manufacture, and to compensate for possible inaccuracies in the method(s) of analysis.

For solids. liquid technical active ingredients,

volatile liquids (maximum boiling point 50°C) and viscous liquids (lower limit 1,000 cP at 20°C), the active ingredient content is expressed in percent weight/weight. For other liquids the active ingredient content is expressed in grammes/litre (w/v) at 20°C and/or percent weight/weight and density.

Users of specifications for liquid products who have information on the active ingredient content both in terms of w/w and w/v are urged to agree beforehand which value will be accepted as the correct statement of content in cases of dispute, for comparing tenders, etc.

Many pesticide formulations, especially wettable (dispersible) powders and emulsifiable concentrates, are intended to be applied in water as a diluent and carrier. Water supplies available in different parts of the world vary widely in hardness and other physical properties. These properties in turn influence the performance of pesticides diluted with these waters. The Standard Water Group of CIPAC in cooperation with FAO recently carried out a survey of the composition and distribution of naturally occurring waters in over 60 FAO member countries. A series of "CIPAC Standard Waters" for testing of pesticidal and other formulations were developed as a result of this survey. Recommendations for the preparation of these

standard waters, reports on the performance of pesticide wettable powders and emulsifiable concentrates in them, and the results of the world survey of naturally occurring waters are published in CIPAC Monograph 1/"Standard Waters", compiled by R. de B. Ashworth and B. Crozier, edited by G. R. Raw; W. Heffer and Sons, Ltd., Hills Road, Cambridge, United Kingdom, 1972.

A pesticide product consists of the pesticide and the container. The manufacturer of the product is responsible for the quality and performance of both. The container is an important part of the product. A good pesticide may be ruined by an unsuitable container.

Technical and formulated pesticides differ widely in their physical, chemical, toxicological and other properties and therefore, in their requirements in regard to container construction, lining, gaskets, closures, etc. The container industry offers a great variety of drums, pails, cans, bottles, bags, boxes, overpacks, liners, closures, etc., in many different combinations. It is the responsibility of the pesticide manufacturer to select the container which is most suitable for each pesticide product.

For these reasons, specifications for pesticide containers are expressed in terms of required performance and stability, leaving it up to the manufacturer to decide

how these can best be met.

The label is a very important element of every pesticide product. As emphasized in the container performance specifications applicable to each product, pesticide labels must be of such design and quality, and must be affixed to the pesticide container in such a way that they do not deteriorate, become illegible or separate from the container, even under the rigors of international transportation and storage, and hot and humid climatic conditions.

A physically satisfactory label may still be useless unless it is written in the language of the user. Pesticide buyers should specify label language requirements when ordering.

In addition to the physical and chemical properties and the labelling of pesticides, certain biological properties are also very important to satisfactory product performance:

Phytotoxicity: At the present stage of our knowledge, no tests can be specified to cover phytoxicity of formulations to crops.

When a certain crop is not specifically mentioned in the instructions for use, purchasers should check

with the supplier to ensure that the material is suitable, always provided that the proposed use is not restricted or legally forbidden.

Wetting of Crops: The dilute spray should satisfactorily wet the leaves of the specified crops when used in accordance with the instructions.

However, owing to wide variations in crops and pests, no specific figures can be assigned to wetting of crops, but the test described as MT 53.2, CIPAC Handbook 1, p. 965, may prove useful.

For further information on pesticide quality, specifications and control procedures, and on the safe handling and use of pesticides, the reader is referred to Part I of this Manual, and to the FAO Manual and the CIPAC Handbook mentioned above.

Part II of this Manual contains basic technical information on the pesticide chemicals for whose formulations Part III provides quality specifications. Part II includes data on each chemical's identity; physical and chemical properties; analytical methods; hazards to humans; hazards to the environment; pesticidal effectiveness, and an effectiveness profile. Plants/pesticides cross reference indices and an index of tradenames and common names containing

more than 250 entries provide ready access to these data. These indicies serve both parts II and III of this Manual. Thus, the usefulness of this part (III) of the Manual will be considerably increased to the user if Parts I and II are on hand also.

DISCLAIMER.

The pesticide specifications in this Manual are provided with the basic objective of assuring, as far as possible, that pesticides complying with them are satisfactory for the purpose for which they are intended. However, due to the complexity of the problems involved, questions such as the suitability of pesticides for the control of a particular pest must be decided at the national or regional level. These specifications should not be assumed to be an endorsement by any agency of the use of a particular pesticide for a given purpose.

Accordingly, neither the FAO, nor the members of the FAO Working Party of Experts on the Official Control of Pesticides: Section B (Specifications), nor the U. S. Agency for International Development (AID), nor the University of California, nor RvR Consultants warrant that pesticides complying with these specifications are suitable for the control of any given pest or for use in any particular area.

Furthermore, the preparation and use of pesticides complying with these specifications are not exempt from any safety regulation or other legal or administrative provision applicable thereto. Neither FAO, nor AID, nor

the University of California, nor RvR Consultants shall be liable for any injury, loss, damage, or prejudice of any kind that may be suffered as a result of the preparation or use of pesticides complying with these specifications.

Additionally, improper field mixing and/or application of pesticides can result in either a lowering or complete loss of their efficacy. This is true even in cases where such pesticides comply with the specifications indicated. Therefore, the parties mentioned above can accept no responsibility for the consequences of improper field mixing and/or application.

ALACHLOR TECHNICAL

Provisional Specification

.1 DESCRIPTION

The material shall consist of alachlor together with related manufacturing impurities, and shall be a yellow solid, free from extraneous impurities or added modifying agents.

.2 ACTIVE INGREDIENT

.2.1 Alachlor (Method not in CIPAC or AOAC Handbooks; GLC Method available from manufacturer)

The alachlor content (minimum: 90%) shall be declared and when determined, the content obtained shall not differ from that declared by more than ± 2.5 percentage units.

.3 IMPURITIES

.3.1 Acidity (CIPAC 1, MT 31, p. 902)

Maximum acidity: 0.2% calculated as H_2SO_4

.3.2 Material Insoluble in Acetone (CIPAC 1, MT 27, p. 894)

The amount of material insoluble in acetone shall not exceed 0.15%.

.3.3 Water (CIPAC 1, MT 30, p. 897)

Maximum: 0.3%.

.4 CONTAINERS

Alachlor technical shall be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination,

oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for alachlor technical shall comply with DOT specification 17 H.

ALACHLOR EMULSIFIABLE CONCENTRATES

Provisional Specification

.1 DESCRIPTION

The product shall consist of an emulsifiable concentrate based on alachlor as the only active ingredient, together with suitable solvents and any necessary formulants. It shall be free from visible suspended matter and sediment.

It shall be formulated from alachlor complying with the specifications for alachlor technical.

.2 ACTIVE INGREDIENT

.2.1 Alachlor (Method not in CIPAC or AOAC Handbooks; GLC Method available from manufacturer)

The alachlor content (% w/w and/or w/v at 20°C = 68°F) shall be declared and when determined, the content obtained shall not differ from that declared by more than ± 5% of the declared content.

.3 IMPURITIES

.3.1 Acidity (CIPAC 1, MT 31, p. 902)

Maximum acidity: 0.1% calculated as H_2SO_4

.3.2 Water (CIPAC 1, MT 30, p. 897)

Maximum: 0.20%.

.4 PHYSICAL PROPERTIES

.4.1 Emulsion Stability (CIPAC 1, MT 36, p. 910)

After the Heat Stability Test (.5.2) the product, when diluted at 30°C (Note: Unless other temperatures are specified) with the specified CIPAC Standard Waters, shall comply with the following:

Time After Dilution	Limits of Stability
0	Initial Emulsifiability: complete
0.5h	Cream, maximum: 2 ml
2.0h	(Cream, maximum: 4 ml (Free Oil: nil
24.0h	Re-emulsification: complete
24.5h	(Cream, maximum: 4 ml (Free Oil, maximum: 0.5 ml

The product shall be tested in Standard Water A and in Standard Water C (Note: Unless other CIPAC Standard Waters are specified in the order) after the Heat Stability Test.

.4.2 Flash Point

The flash point of the product shall not be lower than the minimum declared flash point.

.5 STORAGE STABILITY

.5.1 Low Temperature Stability (CIPAC 1, MT 39, p. 930)

After storage at 0°C for 7 days the volume of solid or liquid which separates shall not be more than 0.3%.

.5.2 Heat Stability (CIPAC 1, MT 46.1.3, p. 952)

After storage at 54 ± 2°C for 14 days the product shall continue to comply with .2.1, .3.1, .3.2, .4.1 and .5.1.

.6 CONTAINERS

Alachlor emulsifiable concentrates shall be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect

the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for alachlor emulsifiable concentrates shall comply with DOT specification 17 E.

ALACHLOR GRANULES

Provisional Specification

.1 DESCRIPTION

The product shall contain alachlor as the only active ingredient, a suitable carrier and, if needed, other formulants. It shall consist of free flowing granules, free from visible extraneous matter and dust (except for the amount specified under .4.2).

It shall be formulated from alachlor complying with the specifications for "Alachlor Technical

.2 ACTIVE INGREDIENT

.2.1 Alachlor (Method not in CIPAC or AOAC Handbooks; GLC Method available from manufacturer)

The alachlor content shall be declared and when determined, the percentage obtained shall not differ from that declared by more than ± 8% of the declared content.

.3 IMPURITIES

.3.1 Acidity (CIPAC 1, MT 31, p. 902)

Maximum acidity: 0.05% calculated as H_2SO_4

.4 PHYSICAL PROPERTIES

.4.1 Particle Size (Dry Sieve Test)

The size range of the particles shall be declared. The ratio of the lower to the upper declared limit shall not exceed 1 : 2.

Not less than 97% of the product shall pass through a test sieve having a mesh size of the upper declared limit. Not more than 5% of the product shall pass through a test sieve having a mesh size of the lower declared limit.

.4.2 Dust

Not more than 1% of the product shall pass through a 75u test sieve. The portion passing through this sieve shall not contain more than 8% of the active ingredient content per .2.1.

(Note: For example, if a product contains 5% of active ingredient, and 100 g of sample are used for the test, the dust protion must not contain more than 8% of 5 g = 0.4 g of active ingredient, and the rest of the sample not less than 4.6 g of active ingredient.)

.5 STORAGE STABILITY

.5.1 Heat Stability

After storage at 54 + 2°C for 14 days, the product shall continue to comply with .2.1, .3.1, .4.1 and .4.2.

.6 CONTAINERS

Alachlor granules shall be packaged in suitable clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for alachlor granules shall comply with DOT specification 21 C for overpack.

PROPANIL TECHNICAL

Provisional Specification

.1 DESCRIPTION

The material shall consist of propanil together with related manufacturing impurities, and shall be a blackish solid, free from extraneous impurities or added modifying agents.

.2 ACTIVE INGREDIENT

.2.1 Propanil (Method not in CIPAC or AOAC Handbooks; GLC Method available from manufacturers)

The propanil content (Minimum: 90%) shall be declared and when determined, the content obtained shall not differ from that declared by more than ± 2.5 percentage units.

.3 IMPURITIES

.3.1 Acidity (CIPAC 1, MT 31, p. 902)

Maximum acidity: 0.3% calculated as H_2SO_4

.3.2 Material Insoluble in Acetone (CIPAC 1, MT 27, p. 894)

The amount of material insoluble in acetone shall not exceed 0.15%.

.3.3 Water (CIPAC 1, MT 30, p. 897)

Maximum: 0.3%.

.4 CONTAINERS

Propanil technical shall be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization.

Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for propanil technical shall comply with DOT specification 17 H.

PROPANIL EMULSIFIABLE CONCENTRATES

Provisional Specification

.1 DESCRIPTION

The product shall consist of an emulsifiable concentrate based on propanil as the only active ingredient, together with suitable solvents and any necessary formulants. It shall be free from visible suspended matter and sediment.

It shall be formulated from propanil complying with the specifications for propanil technical.

.2 ACTIVE INGREDIENT

.2.1 Propanil (Method not in CIPAC or AOAC Handbooks; GLC Method available from manufacturers)

The propanil content (% w/w and/or w/v at 20°C = 68°F) shall be declared and when determined, the content obtained shall not differ from that declared by more than ± 5% of the declared content.

.3 IMPURITIES

.3.1 Acidity (CIPAC 1, MT 31, p. 902)

Maximum acidity: 0.2% calculated as H_2SO_4

.3.2 Water (CIPAC 1, MT 30, p. 897)

Maximum: 0.5%.

.4 PHYSICAL PROPERTIES

.4.1 Emulsion Stability (CIPAC 1, MT 36, p. 910)

After the Heat Stability Test (.5.2) the product, when diluted at 30°C (Note: Unless other temperatures are specified) with the specified CIPAC Standard Waters, shall comply with the following:

Time After Dilution	Limits of Stability
0	Initial Emulsifiability: complete
0.5h	Cream, maximum: 2 ml
2.0h	(Cream, maximum: 4 ml (Free Oil: nil
24.0h	Re-emulsification: complete
24.5h	(Cream, maximum: 4 ml (Free Oil, maximum: 0.5 ml

The product shall be tested in Standard Water A and in Standard Water C (Note: Unless other CIPAC Standard Waters are specified in the order) after the Heat Stability Test.

.4.2 Flash Point

The flash point of the product shall not be lower than the minimum declared flash point.

.5 STORAGE STABILITY

.5.1 Low Temperature Stability (CIPAC 1, MT 39, p. 930)

After storage at 0°C for 7 days the volume of solid or liquid which separates shall not be more than 0.3%.

.5.2 Heat Stability (CIPAC 1, MT 46.1.3, p. 952)

After storage at 54 ± 2°C for 14 days the product shall continue to comply with .2.1, .3.1, .3.2, .4.1 and .5.1.

.6 CONTAINERS

Propanil emulsifiable concentrates shall be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the

product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for propanil emulsifiable concentrates shall comply with DOT specification 17 E.

TRIFLURALIN TECHNICAL

Provisional Specification

.1 DESCRIPTION

The material shall consist of trifluralin together with related manufacturing impurities, and shall be a yellow solid, free from extraneous impurities or added modifying agents.

.2 ACTIVE INGREDIENT

.2.1 Trifluralin (Method not in CIPAC or AOAC Handbooks; GLC Method available from manufacturer.)

The trifluralin content (minimum: 95%) shall be declared and when determined, the content obtained shall not differ from that declared by more than ± 2 percentage units.

.2.2 Identity (IR or GLPC, not in CIPAC 1; Methods available from manufacturer.)

Shall comply.

TRIFLURALIN EMULSIFIABLE CONCENTRATES

Provisional Specification

.1 DESCRIPTION

The product shall consist of an emulsifiable concentrate, based on trifluralin as the only active ingredient, together with suitable solvents and any necessary formulants. It shall be free from visible suspended matter and sediment.

It shall be formulated from trifluralin complying with the specifications for "Trifluralin Technical".

.2 ACTIVE INGREDIENT

.2.1 Trifluralin (Method not in CIPAC or AOAC Handbooks; GLC Method available from manufacturer.)

The trifluralin content (% w/w and/or w/v at 20°C = 68°F) shall be declared and when determined, the content obtained shall not differ from that declared by more than the following amounts:

Declared Content	Permitted Tolerance
Up to 40% or 400 g/l	± 5% of the declared content
Above 40% or 400 g/l	± 2 percentage units or ± 20 g/l

.2.2 Identity (GLPC, not in CIPAC 1; method available from manufacturer.)

Shall comply.

.3 IMPURITIES

.3.1 Water (CIPAC 1, MT 30, p. 897)

Maximum: 0.25%.

.4 PHYSICAL PROPERTIES

.4.1 Emulsion Stability (CIPAC 1, MT 36, p. 910)

After the Heat Stability Test (.5.2) the product, when diluted at 30°C (Note: Unless other temperatures are specified) with the specified CIPAC Standard Waters, shall comply with the following:

Time After Dilution	Limits of Stability
0	Initial Emulsifiability: complete
0.5h	Cream, maximum: 2 ml
2.0h	(Cream, maximum: 4 ml (Free Oil: nil
24.0h	Re-emulsification: complete
24.5h	(Cream, maximum: 4 ml (Free Oil, maximum: 0.5 ml

The product shall be tested in Standard Water A and in Standard Water C (Note: Unless other CIPAC Standard Waters are specified in the order) after the Heat Stability Test.

.4.2 Flash Point (CIPAC 1, MT 12, p. 846)

The flash point of the product shall not be lower than the minimum declared flash point. (Note: Attention is drawn to the appropriate national and international regulations on handling and transport of flammable materials.). The procedure used shall be stated.

.5 STORAGE STABILITY

.5.1 Low Temperature Stability (CIPAC 1, MT 39, p. 930)

After storage at 5°C for 7 days, the volume of solid or liquid which separates shall not be more than 0.3%. (Note: In cold climates it may be necessary to specify a lower temperature.)

.5.2 Heat Stability (CIPAC 1, MT 46.1.3, p. 952)

After storage at 54 ± 2°C for 14 days the concentrate shall continue to comply with .2.1, .4.1 and .5.1.

.6 CONTAINERS

Trifluralin emulsifiable concentrates must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for trifluralin emulsifiable concentrates are not subject to DOT regulation.

DALAPON-SODIUM TECHNICA

FAO Specification 52.1Na/1/S/3

.1 DESCRIPTION AND IDENTITY

.1.1 Description

The material shall consist of the sodium salt of 2,2-dichloropropionic acid (Note: Dalapon is the common name in certain countries for 2,2-dichloropropionic acid.).

.1.2 Identity (52.1Na/1/m/1.7, Method not in CIPAC 1)

Shall comply.

.2 ACTIVE INGREDIENT

.2.1 Dalapon - Sodium (CIPAC 1, 52.1Na/1/M/1.4)

.2.1.1 Minimum

Minimum: 80% w/w

.2.1.2 Declared Content

The dalapon-sodium content shall be declared and when determined, the content obtained shall be not less than 97% of that declared.

.3 IMPURITIES

.3.1 Loss on Drying (-/M/1.2)

Maximum: 3%.

.3.2 Water Insoluble Material (-/M/1.5)

Maximum: 0.5%.

.3.3 Coarse Material Insoluble in Water (-/M/1.6)

Maximum: 0.2% retained on a 150 µm test sieve.

DALAPON SODIUM SALT WATER SOLUBLE POWDER

FAO Specification 52.1Na/16/S/3:

.1 DESCRIPTION AND IDENTITY

.1.1 Description

The product shall be a homogeneous mixture containing the sodium salt of 2,2-dichloropropionic acid as the only active ingredient. It shall be a fine powder or easily friable lumps, free from visible extraneous material. It may contain a wetting agent.

It shall be formulated from dalapon-sodium technical of quality complying with 52.1Na/1/S/3.

.1.2 Identity (52.1Na/16/M/1.2, Method in CIPAC 1A)

Shall comply.

.2 ACTIVE INGREDIENT

.2.1 Dalapon Sodium Salt (-/M/1.4)

The dalapon sodium salt content shall be declared and when determined, the content obtained shall not be below the declared content by more than 3%.

.3 IMPURITIES

.3.1 Material Insoluble in Water (-/M/1.5)

When a solution is prepared not more than 0.25% shall remain on a 150 µm test sieve. The sieved solution shall be free from sediment.

.3.2 pH of Solution (-/M/1.6)

A 10% solution of the material in distilled water shall have a pH between 4.5 and 7.0.

.3.3 Water (-/M/1.2)

Maximum: 1%.

4 PHYSICAL PROPERTIES

4.1 Rate of Solution (-/M/1.7)

All, or nearly all (Note: The amount remaining undissolved shall not exceed the amount of insoluble material found under .3.1.) of 35.9 g of the material shall dissolve in 10 min in 1 litre of CIPAC Standard Water C at 20°C and the solution, after standing for 2 h, shall have not more than 0.1% sediment.

4.2 Persistent Foam (-/M/1.8)

Maximum: 25 ml after 1 min.

5 STORAGE STABILITY

5.1 Heat Stability (-/M/1.9)

After storage at 54 ± 2°C for 14 days the product shall continue to comply with .2.1, .3.1, .3.2 and .4.1.

6 CONTAINERS

Dalapon sodium salt water soluble powder shall be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the

product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for dalapon sodium salt water soluble powder are not subject to DOT regulation.

MCPA TECHNICAL

FAO Specification 2/1/S/4

.1 DESCRIPTION AND IDENTITY

.1.1 Description

This specification refers to technical grades of MCPA which are white to brown granular solids, free flowing powders, or wet cake, with slight odor. They may contain up to 25% of water.

.1.2 Identity (2/1/m/1.9, Method not in CIPAC 1)

Shall comply.

.2 ACTIVE INGREDIENT

.2.1 Extractable Acids (CIPAC 1, 2/1/M1/1.2 Referee Method; or 2/1/M2/1.2)

.2.1.1 Minimum

Minimum: 75%.

.2.1.2 Declared Content

The extractable acid content, expressed as MCPA, shall be declared and when determined, the content obtained shall not differ from that declared by more than ± 2 percentage units.

.2.2 MCPA (-/M1/1.3 Referee Method or -/M2/1.3)

.2.2.1 Minimum

Minimum: 80% of the acid content declared under .2.1.2 (Note: On a declared content of 75% total acids the minimum MCPA content permitted would be 60.0% of the product.)

.2.2.2 Declared Content

The MCPA content shall be declared and when determined, the content

obtained shall not differ from that declared by more than ± 4 percentage units.

.3 IMPURITIES

.3.1 Free Phenols (-/Ml/1.5)

Maximum: 1.5%, calculated as 4-chloro-2-methylphenol, of the MCPA content declared under .2.2. (Note: The content of chlorophenols has been limited to avoid taint of neighboring crops. If the declared content of MCPA is 60% then the maximum content of free phenols permitted is 0.9% of the product.)

.3.2 Material Insoluble in NaOH (-/Ml/1.8)

A NaOH solution of the material shall not leave more than 0.05% residue on a 150 µm test sieve and the sieved solution shall be clear and free from sediment.

.3.3 Sulphated Ash (-/Ml/1.7)

Maximum: 1% of the acid content declared under .2.1. (Note: If the declared content of total acids is 75% the maximum amount of sulphated ash permitted is 0.75% of the product.)

.4 CONTAINERS

MCPA technical shall be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration

of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Conatiners must comply with all applicable national and international transportation, safety and other regulations.

Containers for MCPA technical are not subject to DOT regulation.

MCPA AMINE SALT AQUEOUS SOLUTIONS

Provisional Specification
(FAO Specification 2.4/13/S/4)

.1 DESCRIPTION

The product shall consist of an aqueous solution containing MCPA amine salt as the only active ingredient, together with any necessary formulants. It shall be free from visible suspended matter or sediment.

It shall be formulated from amine salt made from MCPA complying with 2/1/S/4.

.2 ACTIVE INGREDIENT

.2.1 Salts

The name of the MCPA amine salt present shall be stated.

.2.2 Extractable Acids (CIPAC 1, 2.1 Na/13/M/1.3)

The maximum extractable acid content (% w/w and/or g/l at 20°C), expressed as MCPA, shall be declared. This shall be not more than 1.2$\underline{x}$, where $\underline{x}$ is the amount of MCPA found under .2.3. (Note: For an MCPA content of 50% w/w the maximum permitted extractable acid content would be 50 x 1.2, i.e., 60% w/w. For 400 g/l the maximum would be 480 g/l.)

.2.3 MCPA (-/M/1.4)

The MCPA content (% w/w and/or g/l at 20°C) shall be declared and when determined, the content obtained shall not differ from that declared by more than the following amounts:

Declared Content	Permitted Tolerance
Up to 50% w/w or 500 g/l	± 5% of the declared content
Above 50% or 500 g/l	± 2.5% units or ± 25 g/l

.3 IMPURITIES

.3.1 Free Phenols (-/M/1.6)

Maximum: 1.5% expressed as 4-chloro-2-methylphenol of the MCPA content declared under .2.1. (Note: The content of free phenols is limited to avoid taint of neighboring crops. On a declared content of 40% MCPA the maximum permitted free phenol content would be 0.6% of the product.)

.3.2 Material Insoluble in Water (-/M/1.7)

All the insoluble material shall pass through a 250 µ test sieve and not more than 0.1% shall remain on a 150 µ test sieve.

.4 PHYSICAL PROPERTIES

.4.1 Stability on Dilution (-/M/1.9)

The product shall give a clear opalescent solution, i.e., with not more than a trace of sediment and/or visible solid particles.

.5 STORAGE STABILITY

.5.1 Low Temperature Stability (-/M/1.8)

After storage at 0°C for 7 days there shall be no separation of material from the product. (Note: A test temperature of 0°C may not be suitable for products intended for use in cold countries, and alternative test temperatures may be specified.)

.6 CONTAINERS

MCPA amine salt aqueous solutions shall be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to

prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for MCPA amine salt aqueous solutions shall comply with DOT specification 17 E.

FAO Specification Code 1/1/S/4:

.1 DESCRIPTION

This specification refers to technical grades of 2,4-D which are white to slightly brown crystalline powders or wet cakes and possess not more than a slight odor. The material may contain up to 12% of water.

.2 ACTIVE INGREDIENT

.2.1 Extractable Acids (See CIPAC 1, p. 241, section 1.2)

The extractable acid content, expressed as 2,4-D, shall be declared (minimum: 88.0%) and, when determined, the percentage obtained shall not differ from that declared by more than ± 2 percentage units.

.2.2 Equivalent Weight of Extractable Acids (Ibid, p. 243, section 1.3)

Minimum: 220.

Maximum: 224.

.2.3 Melting Point of Extractable Acids (Ibid, p. 244, section 1.4)

Minimum: 137°C.

Maximum: 141°C.

The melting point shall not be depressed by admixture with an equal quantity of pure 2,4-D.

.3 IMPURITIES

.3.1 Free Phenols (Ibid, p. 244, section 1.6)

Maximum: 1%, expressed as 2,4-dichlorophenol, of the acid content declared under .2.1. (Note: The chlorophenol content is limited to avoid possible taint of neighboring crops and

foodstuffs. On a declared content of 90%, the maximum permitted free phenol content would be 0.9% of the product.)

.3.2 Solubility in Triethanolamine (Ibid, p. 245, section 1.9)

A triethanolamine solution of the material shall not leave more than 0.1% residue on a 150 μ test sieve, and the sieved solution shall be clear and free from sediment.

.3.3 Sulphated Ash (Ibid, p. 245, section 1.8)

Maximum: 1% of the acid content declared under .2.1.

.3.4 Water (Ibid, p. 244, section 1.7)

The water content shall be declared.

.4 CONTAINERS

2,4-D technical shall be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years.

If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for 2,4-D technical are not subject to DOT regulations.

2,4-D AMINE SALT AQUEOUS SOLUTIONS

FAO Specification Code 1.4/13/S/5.

.1 DESCRIPTION

The product shall consist of an aqueous solution based on 2,4-D amine(s) as the only active ingredient(s), together with any necessary formulants. It shall be free from visible suspended matter and sediment.

It shall be formulated with amine made from 2,4-D and complying with the specification for "2,4-D Technical".

.2 ACTIVE INGREDIENT

.2.1 Amine Salts

The 2,4-D amines present shall be named.

.2.2 Extractable Acids (See CIPAC 1, p. 261, section 1.3)

The extractable acid content (% w/w and/or g/l at 20°C), expressed as 2,4-D, shall be declared and, when determined, the content obtained shall not differ from that declared by more than the following amounts:

Declared Content	Permitted Tolerance
Up to 50% w/w or 500 g/l	± 5% of the declared content
Above 50% w/w or 500 g/l	± 2.5 percentage units or ± 25 g/l

.2.3 Equivalent Weight of Extractable Acids (Ibid, p. 264, section 1.4)

Minimum: 220.

Maximum: 224.

.2.4 Melting Point of Extractable Acids (Ibid, p. 265, section 1.5)

Minimum: 137°C.

Maximum: 141°C.

The melting point shall not be depressed by admixture with an equal quantity of pure 2,4-D.

.3 IMPURITIES

.3.1 Free Phenols (Ibid, p. 266, section 1.7)

Maximum: 1%, expressed as 2,4-dichlorophenol, of the acid content declared under .2.2. (Note: The chlorophenol content is limited to avoid possible taint of neighboring crops and foodstuffs. On a declared content of 40%, the maximum permitted free phenol content would be 0.4% of the product.)

.3.2 Material Insoluble in Water (Ibid, p. 266, section 1.8)

All the insoluble material shall pass through a 250 µ test sieve, and not more than 0.1% shall remain on a 150 µ test sieve.

.4 PHYSICAL PROPERTIES

.4.1 Stability on Dilution (Ibid, p. 266, section 1.10)

The product shall give a clear or opalescent solution, i.e., free from sediment and/or visible solid particles.

.5 STORAGE STABILITY

5.1 Low Temperature Stability (Ibid, p. 266, section 1.9)

After storage at 0°C for 7 days, there shall be no separation of material. (Note: A test temperature of 0°C may not be suitable for products intended for use in cold countries and, in such cases, an

alternative test temperature may be specified.

.6 CONTAINERS

2,4-D amine aqueous salt solutions shall be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

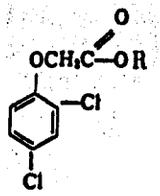
Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for 2,4-D amine aqueous salt solutions shall comply with DOT specification 17 E.

2,4-D TECHNICAL ESTERS

FAO Specification Code 1.3/1/5/4:



.1 DESCRIPTION

This specification refers to grades of 2,4-D esters which shall be free from visible water and suspended matter.

.2 ACTIVE INGREDIENTS

.2.1 Esters

The 2,4-D ester(s) present shall be named, i.e., "R" shall be identified.

.2.2 Extractable Acids (See CIPAC 1, p. 249, section 1.2)

The extractable acid content (% w/w) shall be declared and, when determined, the result obtained shall not differ from that declared by more than + 4%. (Note: The method of analysis is suitable for the majority of 2,4-D technical esters. However, the butoxyethanol ester has been known to give erratic results, in which case the purchaser and supplier should verify that the method is suitable.)

2.3 Equivalent Weight of Extractable Acids (Ibid, p. 254, section 1.3)

Minimum: 219.

Maximum: 225.

2.4 Melting Point of Extractable Acids (Ibid, p. 255, section 1.4)

Minimum: 135°C.

Maximum: 141°C.

The melting point shall not be depressed by admixture with an equal quantity of pure 2,4-D.

.3 IMPURITIES

.3.1 Free Acidity (Ibid, p. 255, section 1.5)

Maximum: 3%, expressed as 2,4-D of the acid content declared under .2.2.

.3.2 Suspended Solids (Ibid, p 255, section 1.7)

Maximum: 0.1% w/w.

.3.3 Water (Ibid, p. 255, section 1.6)

No visible water shall be present.

.4 CONTAINERS

2,4-D technical esters shall be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for 2,4-D technical esters shall comply with DOT specification 17 E.

2,4-D ESTER EMULSIFIABLE CONCENTRATES

FAO Specification Code 1.3/5/S/5:

.1 DESCRIPTION

The product shall consist of an emulsifiable concentrate based on technical 2,4-D ester(s) as the only active ingredient(s), together with suitable solvents and any necessary formulants. It shall be free from visible suspended matter and sediment.

It shall be formulated from 2,4-D esters complying with the specification for "2,4-D Technical Esters".

.2 ACTIVE INGREDIENT

.2.1 Esters

The name(s) of the 2,4-D ester(s) shall be declared. (Note: For products based on mixed esters, the approximate percentage of each ester shall be declared.)

.2.2 Extractable Acids (See CIPAC 1, p. 249, section 1.2 or p. 255, section 1.3. (Note: In case of dispute, method on page 225, section 1.3, 1.3/5/M/1.3 shall be the Referee Method.)

The extractable acid content (% w/w and/or g/l at 20°C), expressed as 2,4-D, shall be declared and, when determined, the content obtained whall not differ from that declared by more than the following amounts:

Declared Content	Permitted Tolerance
Up to 60% w/w	± 6% of the declared content
Above 60% w/w	± 3.6 percentage units

(Note: The methods of analysis are suitable for the majority of 2,4-D ester emulsifiable concentrates. However, the butoxyethanol ester has been known to give erratic results, in which case the purchaser and supplier should verify that the method is suitable.)

.2.3 Equivalent Weight of Extracted Acids (Ibid, p. 259, section 1.4)

Minimum: 219.

Maximum: 225.

.2.4 Melting Point of Extracted Acids (Ibid, p. 260, section 1.5)

Minimum: 135°C.

Maximum: 141°C.

The melting point shall not be depressed by admixture with an equal quantity of pure 2,4-D.

3 IMPURITIES

.3.1 Free Acidity (Note: Method of analysis not included in CIPAC 1.)

Maximum: 3%, expressed as 2,4-D, of the acid content found under .2.2.

.3.2 Material Insoluble in Oil (See CIPAC 1, p. 260, section 1.7)

The product shall give a clear, or opalescent, homogeneous solution, which shall pass completely through a 150 µ test sieve.

.3.3 Water (Ibid, p. 260, section 1.6)

Maximum: 0.5%.

.4 PHYSICAL PROPERTIES

.4.1 Emulsion Stability (Ibid, p. 260, section 1.11)

After the Heat Stability test (.5.2), the product when diluted at 30°C (Note: Unless another tempe ature is specified) with the specified CIPAC Standard Waters, shall comply with the following:

Time After Dilution	Limits of Stability
0	Initial Emulsifiability: complete
0.5h	Cream: maximum 2 ml
2.0h	(Cream: maximum 4 ml (Free Oil: nil
24.0h	Re-emulsification: complete
24.5h	(Cream: maximum 4 ml (Free Oil: maximum 0.5 ml

The product shall be tested in Standard Water A and in Standard Water C after the Heat Stability test (Note: Unless other CIPAC Standard Waters are specified.).

.4.2 Volatility (Ibid, p. 260, section 1.8)

It shall be stated whether the "volatility" of the product is high or low.

.5 STORAGE STABILITY

.5.1 Low Temperature Stability (Ibid, p. 260, section 1.10)

After storage at 0°C for 7 days, the volume of solid and/or liquid which separates shall be not more than 0.3% (Note: A test temperature of 0°C may not be suitable for products intended for use in cold countries and, in such cases, an alternative test temperature may be specified.).

.5.2 Heat Stability (Ibid, p. 260, section 1.12)

After storage at 54 ± 2°C for 14 days, the concentrate shall continue to comply with .2.2, .3.1, .3.2, .4.1, .4.2 and .5.1.

.6 CONTAINERS

2,4-D ester emulsifiable concentrates shall be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for 2,4-D ester emulsifiable concentrates shall comply with DOT specification 17 E.

2,4,5-T TECHNICAL

FAO Specification 6/1/S/4:

.1 DESCRIPTION AND IDENTITY

.1.1 Description

The specification refers to technical grades of 2,4,5-T which are white or slightly brown crystalline powders with not more than slight odor. The material may contain up to 36% of water.

.1.2 Identity (6/1/m/1.11, Method not in CIPAC 1)

Shall comply.

.2 ACTIVE INGREDIENT

.2.1 Extractable Acids (CIPAC 1, 6/1/M/1.2)

.2.1.1 Minimum

Minimum: 64%.

.2.1.2 Declared Content

The extractable acid content, expressed as 2,4,5-T, shall be declared and when determined, the percentage obtained shall not differ from the declared content by more than ± 2 percentage units.

.2.2 Equivalent Weight of Extractable Acids (-/M/1.3)

Minimum: 252.

Maximum: 261.

.2.3 Melting Point of Extractable Acids (-/M/1.4)

Minimum: 150°C.

Maximum: 156°C.

The melting point shall not be depressed by an admixture with pure 2,4,5-T.

.3 IMPURITIES

.3.1 Free Phenols (-/M/1.6)

Maximum: 1.5% expressed as 2,4,5-trichlorophenol of the acid content declared under .2.2. (Note: The free phenol content is limited to avoid taint to neighboring crops. On a declared content of 90% total acids the maximum permitted amount of free phenols would be 1.35% of the product.

.3.2 Material Insoluble in Acetone (-/M/1.9)

Maximum: 0.1%. The insoluble material shall pass completely through a 105 µm test sieve.

.3.3 Sulphated Ash (-/M/1.8)

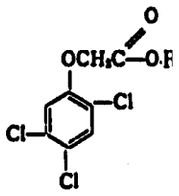
Maximum: 0.1% of the acid content declared under .2.2. (Note: On a declared content of 90% the maximum permitted amount would be 0.90% of the product.)

.3.4 2,3,7,8 - Tetrachlorodibenzo-p-dioxin and Related Compounds (-/M/1.10, Method not in CIPAC 1)

Maximum: 1 µg/g of extractable acid content found under .2.1.

2,4,5-T TECHNICAL ESTERS

FAO Specification 6.3/1/S/4:



.1 DESCRIPTION AND IDENTITY

.1.1 Description

This specification refers to technical grades of 2,4,5-T esters which shall be free from visible water and suspended matter.

.1.2 Identity (6.3/1/m/1.5, Method not in CIPAC 1)

Shall comply.

.2 ACTIVE INGREDIENTS

.2.1 Esters

The name(s) of the esters present shall be given, i.e. "R" shall be identified.

.2.2 Extractable Acids (CIPAC 1, 6.3/1/M/1.2)

The extractable acid content (% w/w) shall be declared and when determined, the percentage obtained shall not differ from that declared by more than $\pm$ 3% of the declared content.

.2.3 Equivalent Weight of Extractable Acid (-/M/1.3)

Minimum: 252.

Maximum: 261.

.2.4 Melting Point of Extractable Acids (-/M/1.4)

Minimum: 150°C.

Maximum: 156°C.

The melting point shall not be depressed by admixture with an equal quantity of pure 2,4,5-T.

.3 IMPURITIES

.3.1 Free Acidity (-/M/1.6)

Maximum: 3% w/w of extractable acids, expressed as 2,4,5-T.

.3.2 Suspended Solids (-/M/1.8)

Maximum: 0.1% w/w.

.3.3 Water (-/M/1.7)

Visible water shall be absent from the material.

.3.4 2,3,7,8-Tetrachlorodibenzo-p-dioxin and Related Compounds (-/m/1.9, Method not in CIPAC 1)

Maximum: 1 µg/g of the extractable acid content found under .2.2.

.4 CONTAINERS

2,4,5-T technical esters shall be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for 2,4,5-T technical esters shall comply with DOT specification 17 E.

2,4,5-T AMINE SALT AQUEOUS SOLUTIONS

FAO Specification 6.4/13/S/4:

.1 DESCRIPTION AND IDENTITY

.1.1 Description

The product shall consist of an aqueous solution based on 2,4,5-T amine(s) salts as the only active ingredient together with any necessary formulants for use in sprays. It shall be free from visible suspended matter and sediment.

It shall be formulated with amines made from 2,4,5-T technical of quality conforming to 6/1/S/4.

.1.2 Identity (6.4/13/m/1.12, Method not in CIPAC 1)

Shall comply.

.2 ACTIVE INGREDIENT

.2.1 Amine Salts

The 2,3,5-T amine(s) present shall be named.

.2.2 Extractable Acids (CIPAC, 6.4/13/M/1.3)

The extractable acid content (% w/w and/or g/l at 20°C), expressed as 2,4,5-T shall be declared, and when determined the content obtained shall not differ from that declared by more than the following amounts:

Declared Content	Permitted Tolerance
Up to 50% w/w or 500 g/l	± 5% of the declared content
Above 50% w/w or 500 g/l	± 2.5 percentage units or ± 25 g/l

.2.3 Equivalent Weight of Extractable Acids (-/M/1.4)

Minimum: 252.

Maximum: 261.

.2.4 Melting Point of Extractable Acids (-/M/1.5)

Minimum: 150°C.

Maximum: 156°C.

The melting point shall not be depressed by admixture with an equal quantity of pure 2,4,5-T.

.3 IMPURITIES

.3.1 Free Phenols (-/M/1.7)

Maximum: 1.5%, expressed as 2,4,5-trichlorophenol of the acid content declared in .2.2. (Note: The content of chlorophenols is limited to avoid possible taint problems in neighboring crops. On a product containing a declared 40% of acids the maximum permitted concentration of free phenols would be 0.6%.

.3.2 Material Insoluble in Water (-/M/1.8)

All the insoluble material shall pass through a 250 µm test sieve and not more than 0.1% shall remain on a 150 µm test sieve.

.3.3 2,3,7,8 - Tetrachlorodibenzo-p-dioxin and Related Compounds (-/m/1.11, Method not in CIPAC 1)

Maximum: 1 µg/g of extractable acid content found under .2.2.

4 PHYSICAL PROPERTIES

4.1 Stability on Dilution (-/M/1.10)

The product shall give a clear or opalescent solution, i.e., free from sediment and/or visible solid particles.

5 STORAGE STABILITY

.5.1 Low Temperature Stability (-/M/1.9)

After storage at 0°C for 7 days there shall be no separation of material. (Note: A test temperature

of 0°C may not be suitable for products intended for use in cold countries and alternative test temperatures may be specified.)

6 CONTAINERS

2,4,5-T amine salt aqueous solutions shall be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for 2,4,5-T amine salt aqueous solutions shall comply with DOT specification 17 E.

2,4,5-T ESTER EMULSIFIABLE CONCENTRATES

FAO Specification 6.3/5/S/4:

.1 DESCRIPTION AND IDENTITY

.1.1 Description

The product shall consist of an emulsifiable concentrate based on technical 2,4,5-T ester(s) as the only active ingredient(s) together with suitable solvents and any necessary formulants. It shall be free from visible suspended matter and sediment.

It shall be formulated from 2,4,5-T technical esters of quality complying with 6.3/1/S/4.

.1.2 Identity (6.3/5/m/1.15, Method not in CIPAC 1)

Shall comply.

.2 ACTIVE INGREDIENT

.2.1 Esters

The name(s) of the 2,4,5-T ester(s) shall be declared. (Note: For products based on mixed esters the appropriate percentage of each ester shall be declared.)

.2.2 Extractable Acids (CIPAC 1, 6.3/1/M/1.2; Note: See 2,4,5-T Technical Esters - Methods of Analysis; or 6.3/5/M/1.3; Note: In case of dispute 6.3/5/M/1.3 shall be the Referee Method.)

The extractable acid content (w/w and/or g/l at 20°C), expressed as 2,4,5-T, shall be declared and when determined, the content obtained shall not differ from that declared by more than the following amounts:

Declared Content	Permitted Tolerance
Up to 60% w/w or 600 g/l	± 5% of the declared content
Above 60% w/w or 600 g/l	+ 3.0 percentage units or ± 30 g/l

.2.3 Equivalent Weight of Extractable Acids (-/M/1.4)

Minimum: 252.

Maximum: 261.

.2.4 Melting Point of Extractable Acids (-/M/1.5)

Minimum: 150°C.

Maximum: 156°C.

The melting point shall not be depressed by admixture with an equal quantity of pure 2,4,5-T.

.3 IMPURITIES

.3.1 Free Acidity (-/m/1.14, Method not in CIPAC 1)

Maximum: 3%, expressed as 2,4,5-T, of the extractable acid content found under .2.2.

.3.2 Material Insoluble in Oil (-/M/1.7)

The product shall give a clear or opalescent, homogeneous solution which shall pass completely through a 150 µm test sieve.

.3.3 Water (-/M/1.6)

Maximum: 0.5%.

.3.4 2,3,7,8-Tetrachlorodibenzene-p-dioxin and Related Compounds (-/M/1.13, Method not in CIPAC 1)

Maximum: 1 µg/g of the extractable acid content found under .2.2.

.4 PHYSICAL PROPERTIES

.4.1 Emulsion Stability (-/M/1.11)

After the Heat Stability Test (.5.2) the product when diluted at 30°C (Note: The test temperature shall be 30°C unless another temperature is specified.) with the specified CIPAC Standard Water, shall comply with the following:

Time After Dilution	Limits of Stability
0	Initial Emulsifiability, complete
0.5h	Cream, maximum 2 ml
2h	(Cream, maximum 4 ml (Free Oil, nil
24h	re-Emulsification, complete
24.5h	(Cream, maximum 4 ml (Free Oil, nil

The product shall be tested in Standard Water A and in Standard Water C (Note: Unless other CIPAC Standard Waters are specified.).

.4.2 Flash Point (-/M/1.9)

The flash point of the product shall be not more than the minimum declared flash point (Note: Attention is drawn to the appropriate national and international regulations concerning handling and transport of flammable materials.). The procedure used shall be stated, e.g., Abel method.

.4.3 Volatility (-/M/1.8)

It shall be stated whether the "volatility" of the product is high or low.

.5 STORAGE STABILITY

.5.1 Low Temperature Stability (-/M/1.10)

After storage at 0°C (Note: A test temperature of 0°C may not be suitable for products intended for use in cold countries and an alternative test temperature may be specified.) for 7 days the volume of solid and/or liquid which separates shall be not more than 0.3%.

.5.2 Storage Stability (-/M/1.12)

After storage at 54 ± 2°C for 14 days the product shall continue to comply with .2.2, .3.1, .3.2, .4.1 and .5.1.

.6 CONTAINERS

2,4,5-T ester emulsifiable concentrates shall be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for 2,4,5-T ester emulsifiable concentrate shall comply with DOT specification 17 E.

CARBARYL TECHNICAL

FAO Provisional Specification 26/1/(S)/5:

1 DESCRIPTION AND IDENTITY

.1.1 Description

The material shall consist, essentially, of carbaryl as an off white, crystalline or granular material, tinted green, grey, pink, or other color, with not more than faint ordor.

.1.2 Identity (-/m/1.3, Method not in CIPAC 1)

Identity by infrared adsorptivity.

.2 ACTIVE INGREDIENT

.2.1 Carbaryl (26/1/m2/1.1, Method not in CIPAC 1)

Minimum: 99.0%.

.2.2 Melting Point (-/M/1.4)

Minimum: 142°C.

.3 IMPURITIES

.3.1 2-Napthol (-/m/1.5, Method not in CIPAC 1)

Maximum: 0.05%.

.3.2 2-Naphthyl Methylcarbamate (-/m/1.6, Method not in CIPAC 1)

Maximum: 0.05%.

.3.3 Loss on Vacuum Drying (-/M/1.7, Method not in CIPAC 1)

Maximum: 1%.

.4 CONTAINERS

Carbaryl technical must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

CARBARYL WETTABLE (DISPERSIBLE) POWDERS

FAO Specification 26/3/S/5:

.1 DESCRIPTION AND IDENTITY

.1.1 Description

The product shall consist of a homogeneous mixture containing carbaryl as the only active ingredient, together with fillers and any necessary formulants. It shall be a fine powder, free from visible extraneous materials and hard aggregates and be white to cream unless otherwise agreed.

It shall be formulated from carbaryl complying with 26/1/(S)/5.

.1.2 Identity (26/3/m/1.11, Method not in CIPAC 1)

Shall comply.

.2 ACTIVE INGREDIENT

.2.1 Carbaryl (CIPAC 1, 26/3/M/1.2)

The carbaryl content shall be declared and when determined, the percentage obtained shall not differ from that declared by more than ± 2.5 percentage units.

.3 IMPURITIES

.3.1 2-Naphthol

Maximum: 0.05% of the carbaryl content found under .2.1 (-/m/1.12, Method not in CIPAC 1)

.4 PHYSICAL PROPERTIES

.4.1 Wet Sieve Test (-/m/1.3, Method not in CIPAC 1)

Minimum: 98% through a 45 µm test sieve.

.4.2 Suspensibility (-/M/1.8)

A minimum of 90% of the carbaryl content declared

under .2.1 shall be in suspension after 30 min. in CIPAC Standard Water A (Note: This requirement shall not apply when the concentration of carbaryl in the dilute spray is greater than 2%. Specification requirements and methods of determination for these cases are under consideration.) when determined on the product as received, and in CIPAC Standard Water C after the Heat Stability Test.

Alternatively, if the buyer requires other CIPAC Standard Waters to be used, then this shall be specified when ordering.

.4.3 Dispersibility (-/m/1.4, Method not in CIPAC 1)

Not less than 95% shall pass through a 45 µm test sieve without pretreatment, and not less than 90% shall pass the same sieve after pretreatment.

.4.4 pH of 1% Aqueous Dispersion (-/m/1.5, Method not in CIPAC 1)

Minimum pH: 6.0.

Maximum pH: 9.0 (-/m/1.5).

If the pH is above 8.0, not more than 1.0 ml of 0.25N hydrochloric acid shall be required to neutralize an 8.0 g sample, using phenolphthalein as indicator.

.4.5 Wettability of the Product (-/M/1.9)

Shall be completely wetted in 2 min without swirling.

.4.6 Persistent Foam (-/M/1.6)

Maximum: 25 ml after 1 min.

.5 STORAGE STABILITY

.5.1 Heat Stability (-/M/1.10)

After storage at 54 ± 2°C for 14 days, the product shall continue to comply with .2.1, .4.1, .4.2, .4.3, .4.4 and .4.5.

.6 CONTAINERS

Carbaryl wettable (dispersible) powders must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better proteciton. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

CARBARYL GRANULES

Provisional Specification

.1 DESCRIPTION

The product shall contain carbaryl as the only active ingredient, a suitable carrier and, if needed, other formulants. It shall consist of free flowing granules, free from visible extraneous matter and dust (except for the amount specified under .4.2).

It shall be formulated from carbaryl technical complying with FAO Provisional Specification 26/1/(S)/5.

.2 ACTIVE INGREDIENT

.2.1 Carbaryl (CIPAC 1, 26/2/M/1.2, p. 188)

The carbaryl content shall be declared and when determined, the percentage obtained shall not differ from that declared by more than ± 8% of the declared content.

.3 IMPURITIES

.3.1 Acidity or Alkalinity (CIPAC 1, MT 31, p. 902)

Maximum acidity: 0.1% calculated as H_2SO_4

Maximum alkalinity: 0.2% calculated as NaOH

.4 PHYSICAL PROPERTIES

.4.1 Particle Size (Dry Sieve Test)

The size range of the particles shall be declared. The ratio of the lower to the upper declared limit shall not exceed 1 : 2.

Not less than 97% of the product shall pass through a test sieve having a mesh size of the upper declared limit. Not more than 5% of the product shall pass through a test sieve having a mesh size of the lower declared limit.

.4.2 Dust

Not more than 1% of the product shall pass through a 75μ test sieve. The portion passing through this sieve shall not contain more than 8% of the active ingredient content per .2.1.

(Note: For example, if a product contains 5% of active ingredient, and 100 g of sample are used for the test, the dust portion must not contain more than 8% of 5 g = 0.4 g of active ingredient, and the rest of the sample not less than 4.6 g of active ingredient.)

.5 STORAGE STABILITY

.5.1 Heat Stability

After storage at 54 ± 2°C for 14 days, the product shall continue to comply with .2.1, .3.1, .4.1 and .4.2.

.6 CONTAINERS

Carbaryl granules shall be packaged in suitable clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

MALATHION TECHNICAL

Provisional Specification
(FAO Specification 12/1/S/3:)

.1 DESCRIPTION

The material shall consist, essentially, of malathion and shall be a clear, colorless to light amber liquid, free from extraneous materials or added modifying agents.

.2 ACTIVE INGREDIENT

.2.1 Malathion (CIPAC 1, 12/(M)/1.2)

The malathion content (% w/w; minimum: 95.0%) shall be declared and when determined, the percentage obtained shall not differ from that declared by more than ± 2 percentage units.

.3 IMPURITIES

.3.1 Material Insoluble in Acetone (-/M/1.7)

Maximum: 0.5% w/w

.3.2 Acidity (-/M/1.6)

Maximum: 1.0% w/w, calculated as H_2SO_4

.3.3 Diethyl Fumarate (-/(M)/1.5)

Maximum: 1.0% w/w

.3.4 Iron (-/m/1.4)

Maximum: 10 µg/g

.3.5 Water (-/M/1.8)

Maximum: 0.15% w/w

.3.6 Methyl Mercaptans (-/m/1.10)

Maximum: 30 µg/g (Note: For special purposes, where the odor is important, e.g. products for use on flowers, a lower methyl mercaptan content reduces the odor.)

.4 PHYSICAL PROPERTIES

.4.1 Weight per Millilitre (-/M/1.9)

Minimum: 1.23 ± 0.01 g at 20°C.

.5 CONTAINERS

Malathion Technical must be packaged in suitable clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for Malathion technical are not subject to DOT regulation.

MALATHION EMULSIFIABLE CONCENTRATES

Provisional Specification
(FAO Specification 12/5/S/3:)

.1 DESCRIPTION

The product shall consist of an emulsifiable concentrate, based on malathion as the sole active ingredient, together with suitable solvents and any necessary formulants. It shall be free from visible suspended matter and sediment.

It shall be formulated from malathion complying with 12/1/S/3.

.2 ACTIVE INGREDIENT

.2.1 Malathion (CIPAC 1, 12/5/(M)/1.3)

The malathion content (Note: For special purposes where odor is important, e.g., for use on flowers, the malathion should contain less than 30 µg/g of methyl mercaptan.) shall be declared (% w/w and/or g/l at 20°C) and when determined, the result obtained shall not differ from that declared by more than the following amounts:

Declared Content	Permitted Tolerance
Up to 40%	- 5% of the declared content
	+ 10% of the declared content
40% and over	- 2 percentage units
	+ 4 percentage units

.3 IMPURITIES

.3.1 Acidity or Alkalinity (-/(M)/1.6)

Maximum acidity: 0.5%, calculated as H_2SO_4

Maximum alkalinity: 0.5%, calculated as NaOH

.3.2 Iron (-/m/1.5)

Maximum: 15 µg/g

.3.3 Water (-/M/1.8)

Maximum: 0.2%

.4 PHYSICAL PROPERTIES

.4.1 Emulsion Stability (-/M/1.10)

After the Heat Stability test (.5.2), the product, when diluted at 30°C (Note: The temperature of test shall be 30°C, unless otherwise agreed.) with the specified CIPAC Standard Waters, shall comply with the following:

Initial emulsifiability	:	complete
'Cream' after 30 min	:	maximum: 2 ml
'Cream' after 2 h	:	maximum: 4 ml
'Free Oil' after 2 h	:	nil
Re-emulsification after 24 h	:	complete
'Cream' 30 min later	:	maximum: 4 ml
'Free Oil' 30 min later	:	maximum: 0.5 ml

The product shall be tested in Standard Water A and in Standard Water C (Note: Unless other CIPAC Standard Waters are specified.).

.5 STORAGE STABILITY

.5.1 Low Temperature Stability (-/M/1.9)

After storage at 0°C for 7 days the volume of solid or liquid which separates shall be not more than 0.3%.

.5.2 Heat Stability (-/M/1.11)

After storage at 54 + 2°C for 14 days the product shall continue to comply with .2.1 (except that the minimum

permitted malathion content shall be not less than 94.5% of that declared for products containing up to 40% and - 2.2 percentage units for 40% and over) and .3.1, .3.3, .4.1 and .5.1.

.6 CONTAINERS

Malathion emulsifiable concentrates must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for Malathion emulsifiable concentrates are not subject to DOT regulation. Containers meeting DOT 17 E are suitable.

MALATHION WETTABLE (DISPERSIBLE) POWDERS

Provisional Specification
(FAO Specification 12/3/S/2:)

.1 DESCRIPTION

The product shall consist of a homogeneous mixture containing malathion as the sole active ingredient, together with fillers and any necessary formulants. It shall be a fine powder, free from visible extraneous materials and hard aggregates.

It shall be formulated from malathion complying with 12/1/S/3.

.2 ACTIVE INGREDIENT

.2.1 Malathion (CIPAC 1, 12/3/(M)/1.2)

The malathion content (Note: For special purposes, where odor is important, e.g., products for use on flowers, the malathion should contain less than 30 µg/g of methyl mercaptans.) shall be declared and when determined, the percentage obtained shall not differ from that declared by more than the following amounts:

Declared Content	Permitted Tolerance
Up to 40%	-5 or + 20% of the declared content
Over 40%	-2 or + 10 percentage units

.3 IMPURITIES

.3.1 Acidity or Alkalinity (-/(M)/1.4)

Maximum acidity: 0.5%, calculated as H_2SO_4

Maximum alkalinity: 0.2%, calculated as NaOH

.4 PHYSICAL PROPERTIES

.4.1 Wet Sieve Test (-/M/1.5)

Minimum: 98% through a 75 µm test sieve.

.4.2 Suspensibility (-/M/6)

A minimum of 50% of the malathion content, declared under .2.1, shall be in suspension after 30 min and not less than 50% after the Heat Stability test (Note: This requirement shall not apply when the concentration of malathion in the dilute spray is greater than 1%. Specification requirements and methods of determination for these cases are under consideration.) in CIPAC Standard Water A when determined on the sample as received, and in CIPAC Standard Water C after the Heat Stability test.

Alternatively, if the buyer requires other CIPAC Standard Waters to be used, then this shall be specified when ordering.

.4.3 Wettability of the Product (-/M/1.7)

Shall be completely wetted in 1 min.

.4.4 Persistent Foam (-/M/1.8)

Maximum: 25 ml after 1 min.

.5 STORAGE STABILITY

.5.1 Heat Stability (-/M/1.9)

After storage at 90 + 2°C for 20 h the product shall continue to comply with .2.1, (except that the minimum content of malathion shall be not less than 90% of the declared content for products containing up to 40% and -2.2 percentage units for porducts over 40%) and .3.1, .4.1, and .4.3.

.6 CONTAINERS

Malathion wettable (dispersible) powders must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination,

oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for Malathion wettable (dispersible) powders are not subject to DOT regulation.

MALATHION DUSTS

Provisional Specification
(FAO Specification 12/2/S/3:)

.1 DESCRIPTION

The product shall consist of a homogeneous mixture containing technical malathion as the only active ingredient, together with carriers and any necessary formulants. It shall be a fine, free flowing, dustable material, free from visible extraneous materials and hard aggregates.

It shall be formulated from malathion complying with 12/1/S/3.

.2 ACTIVE INGREDIENT

.2.1 Malathion (CIPAC 1, 12/2/(M)/1.2)

The malathion content (Note: For special purposes where odor is important, e.g., products for use on flowers, the malathion should contain less than 30 µg/g of methyl mercaptans.) shall be declared, and when determined, the percentage obtained shall not differ from that declared by more than -10.0 or + 25.0% of the declared content.

.3 IMPURITIES

.3.1 Acidity or Alkalinity (-/(M)/1.4)

Maximum acidity: 0.4% calculated as H_2SO_4

Maximum alkalinity: 0.2% calculated as NaOH

.4 PHYSICAL PROPERTIES

.4.1 Dry Sieve Test (-/M/1.5)

.4.1.1 Crop Protection (Use on Plants)

Not less than 95% of the product shall pass through a 75 µm test sieve.

Not more than 0.05x% of the sample used for the determination shall be present as malathion in

the residue on the sieve, where x is the percentage malathion content declared under .2.1 above. Note: If the dust contains a declared content of 5% malathion and 20 g of sample is used in the test, then the amount of malathion in the residue on the sieve should not exceed 0.05 g for .4.1.1 nor 0.02 g for .4.1.2. i.e.,

$$\frac{(0.05x \text{ or } 0.02x) \times \text{weight of sample}}{100} \text{ g}$$

.4.1.2 Crop Protection (Ground Application) Stored Products and Similar Uses

Not less than 98% of the product shall pass through a 150 µm test sieve.

Not more than 0.02x% of the sample used for the determination shall be present as malathion in the residue on the sieve, where x is the percentage malathion content declared under .2.1 above (Refer to "Note" under .4.1.1).

.4.2 Flowability (-/(M)/1.6)

Maximum flow number: 12

.5 STORAGE STABILITY

.5.1 Heat Stability (-/M/1.7)

After storage at 54 + 2°C for 14 days the product shall continue to comply with .2.1, (except that the minimum permitted malathion content shall not differ from that declared by more than -15%), .3.1, .4.1 and .4.2.

.6 CONTAINERS

Malathion dusts must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must

be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for malathion dusts are not subject to DOT regulation.

NALED TECHNICAL

Provisional Specification

.1 DESCRIPTION

The material shall consist of naled together with related manufacturing impurities, and shall be an amber liquid, free from extraneous impurities or added modifying agents.

.2 ACTIVE INGREDIENT

.2.1 Naled (Method not in CIPAC or AOAC Handbooks; GLC Method available from manufacturer.)

The naled content (minimum: 90%) shall be declared and when determined, the content obtained shall not differ from that declared by more than ± 2 percentage units.

.3 IMPURITIES

3.1 Acidity or Alkalinity (CIPAC 1, MT 31, p. 902)

Maximum acidity: 1.0% calculated as H_2SO_4

Maximum alkalinity: 0.2% calculated as NaOH

3.2 Material Insoluble in Acetone (CIPAC 1, MT 27, p. 894)

Maximum: 0.5%.

3.3 Water (CIPAC 1, MT 30, p. 897)

Maximum: 0.2%.

3.4 Metals

Naled reacts with most metals except stainless steel. It is especially corrosive to aluminum, magnesium and soft iron. Iron contamination will catalyze naled decomposition.

.4 CONTAINERS

Naled technical must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycyling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for Naled technical shall comply with DOT specification 6 D.

NALED EMULSIFIABLE CONCENTRATES

Provisional Specification

.1 DESCRIPTION

The product shall consist of an emulsifiable concentrate, based on naled as the only active ingredient, together with suitable solvents and any necessary formulants. It shall be free from visible suspended matter and sediment.

It shall be formulated from naled complying with the specifications for "Naled Technical".

.2 ACTIVE INGREDIENT

.2.1 Naled (Method not in CIPAC or AOAC Handbooks; GLC Method available from manufacturer.)

The naled content (% w/w and/or w/v at $20^{o}C = 68^{o}F$) shall be declared and when determined, the content obtained shall not differ from that declared by more than the following amounts:

Declared Content	Permitted Tolerance
Up to 40% or 400 g/l	± 5% of the declared content
Above 40% or 400 g/l	± 2 percentage units or ± 20 g/l

.3 IMPURITIES

.3.1 Acidity or Alkalinity (CIPAC 1, MT 31, p. 902)

Maximum acidity: 1.0% calculated as H_2SO_4

Maximum alkalinity: 0.2% calculated as NaOH

.3.2 Water (CIPAC 1, MT 30, p. 897)

Maximum: 0.2%.

.3.3 Metals

Naled reacts with most metals except stainless steel. It is especially corrosive to aluminum, magnesium and soft iron. Iron contamination will catalyze naled decomposition.

.4 PHYSICAL PROPERTIES

.4.1 Emulsion Stability (CIPAC 1, MT 36, p. 910)

After the Heat Stability Test (.5.2) the product, when diluted at 30°C (Note: Unless other temperatures are specified) with the specified CIPAC Standard Waters, shall comply with the following:

Time After Dilution	Limits of Stability
0	Initial Emulsifiability: complete
0.5h	Cream, maximum: 2 ml
2.0h	(Cream, maximum: 4 ml (Free Oil: nil
24.0h	Re-emulsification: complete
24.5h	(Cream, maximum: 4 ml (Free Oil, maximum: 0.5 ml

The product shall be tested in Standard Water A and in Standard Water C (Note: Unless other CIPAC Standard Waters are specified in the order) after the Heat Stability Test.

.4.2 Flash Point (CIPAC 1, MT 12, p. 846)

The flash point of the product shall not be lower than the minimum declared flash point. (Note: Attention is drawn to the appropriate national and international regulations on handling and transport of flammable materials.). The procedure used shall be stated.

5 STORAGE STABILITY

5.1 Low Temperature Stability (CIPAC 1, MT 39, p. 930)

After storage at 0°C for 7 days, the volume of solid or liquid which separates shall not be more than 0.3%. (Note: In cold climates it may be necessary to specify a lower temperature.)

5.2 Heat Stability (CIPAC 1, MT 46.1.3, p. 952)

After storage at 54 ± 2°C for 14 days, the concentrate shall continue to comply with .2.1, .3.1, .4.1 and .5.1.

6 CONTAINERS

Naled emulsifiable concentrates must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for Naled emulsifiable concentrates shall comply with DOT specification 6 D.

DIMETHOATE TECHNICAL

Provisional Specification

.1 DESCRIPTION

The material shall consist of dimethoate together with related manufacturing impurities, and shall be a white solid, free from extraneous impurities or added modifying agents.

.2 ACTIVE INGREDIENT

.2.1 Dimethoate (Method not in CIPAC or AOAC Handbooks; GLC Method available from manufacturer.)

The dimethoate content (minimum: 95%) shall be declared and when determined, the content obtained shall not differ from that declared by more than ± 2 percentage units.

.2.2 Identity (Method not in CIPAC 1, TLC Method available from manufacturer.)

Shall comply.

.3 IMPURITIES

.3.1 Acidity or Alkalinity (CIPAC 1, MT 31, p. 902)

Maximum acidity: 0.3% calculated as H_2SO_4

Maximum alkalinity: 0.3% calculated as NaOH

.3.2 Material Insoluble in Acetone (CIPAC 1, MT 27, p. 894)

Maximum: 0.5%.

.3.3 Water (CIPAC 1, MT 30, p. 897)

Maximum: 0.5%.

.4 CONTAINERS

Dimethoate technical shall be packaged in suitable clean containers which do not affect, and are not

affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for dimethoate technical are not subject to DOT regulation.

Note:

Dimethoate technical and formulations will deteriorate at elevated temperatures. They must be stored in a cool, dry place and should not be exposed to temperatures above 30°C. Labels shall include appropriate directions to this effect.

DIMETHOATE EMULSIFIABLE CONCENTRATES

Provisional Specification

.1 DESCRIPTION

The product shall consist of an emulsifiable concentrate, based on dimethoate as the only active ingredient, together with suitable solvents and any necessary formulants. It shall be free from visible suspended matter and sediment.

It shall be formulated from dimethoate complying with the specifications for "Dimethoate Technical".

.2 ACTIVE INGREDIENT

.2.1 Dimethoate (Method not in CIPAC or AOAC Handbooks; GLC Method available from manufacturer.)

The dimethoate content (% w/w and/or w/v at 20°C = 68°F) shall be declared and, when determined, the content obtained shall not differ from that declared by more than the following amounts:

Declared Content	Permitted Tolerance
Up to 40% or 400 g/l	± 5% of the declared content
Above 40% or 400 g/l	± 2 percentage units or ± 20 g/l

.2.2 Identity (Method not in CIPAC 1, TLC Method available from manufacturer.)

Shall comply.

.3 IMPURITIES

.3.1 Acidity or Alkalinity (CIPAC 1, MT 31, p. 902)

Maximum acidity: 0.5% calculated as H_2SO_4

Maximum alkalinity: 0% calculated as NaOH

.3.2 Water (CIPAC 1, MT 30, p. 897)

Maximum: 0.2%.

.3.3 Phenol (Method not in CIPAC 1, Titration Method available from manufacturer.)

Dimethoate emulsifiable concentrates may contain phenol to improve low temperature stability. The phenol content shall be declared, and the amount found shall not exceed the maximum content declared.

.4 PHYSICAL PROPERTIES

.4.1 Emulsion Stability (CIPAC 1, MT 36, p. 910)

After the Heat Stability Test (.5.2) the product, when diluted at 30°C (Note: Unless other temperatures are specified) with the specified CIPAC Standard Waters, shall comply with the following:

Time After Dilution	Limits of Stability
0	Initial Emulsifiability: complete
0.5h	Cream, maximum: 2 ml
2.0h	(Cream, maximum: 4 ml (Free Oil: nil
24.0h	Re-emulsification: complete
24.5h	(Cream, maximum: 4 ml (Free Oil, maximum: 0.5 ml

The product shall be tested in Standard Water A and in Standard Water C (Note: Unless other CIPAC Standard Waters are specified in the order) after the Heat Stability Test.

.4.2 Flash Point (CIPAC 1, MT 12, p. 846)

The flash point of the product shall not be

lower than the minimum declared flash point. (Note: Attention is drawn to the appropriate national and international regulations on handling and transport of flammable materials.). The procedure used shall be stated.

.5 STORAGE STABILITY

.5.1 Low Temperature Stability (CIPAC 1, MT 39, p. 930)

After storage at 0°C for 7 days, the volume of solid or liquid which separates shall not be more than 0.3%. (Note: In cold climates it may be necessary to specify a lower temperature.)

.5.2 Heat Stability (CIPAC 1, MT 46.1.3, p. 952)

After storage at 40 ± 2°C for 14 days, the concentrate shall continue to comply with .2.1 (except that the minimum permitted dimethoate content shall be not less than 90.0% of that declared), .3.1, .4.1 and .5.1.

.6 CONTAINERS

Dimethoate emulsifiable concentrates must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for dimethoate emulsifiable concentrates shall comply with DOT specification 17 E.

Note:

Dimethoate emulsifiable concentrates will deteriorate at elevated temperatures. They must be stored in a cool, dry place and should not be exposed to temperatures above 30°C. Labels shall include appropriate directions to this effect.

FENTHION TECHNICAL

FAO Provisional Specification 79/1/(S)/3:

.1 DESCRIPTION AND IDENTITY

.1.1 Description

The material shall consist essentially of fenthion together with related compounds, and shall be a yellow or brown liquid, free from extraneous materials or added modifying agents.

.1.2 Identity (79/1/m/1.2, Method not in CIPAC 1)

Shall comply.

.2 ACTIVE INGREDIENT

.2.1 Fenthion and Impurities (-/m/1.3)

The fenthion content shall be declared (minimum 95% including impurities) and when determined, the percentage obtained shall not differ from that declared by more than ± 2 percentage units.

.3 IMPURITIES

.3.1 O,O-Dimethyl-O-/3-methyl-4, 6-bis-(methylthio)-phenyl/ - monothio - phosphate (bis-methylthio-compound) (-/m/1.4, Method not in CIPAC 1)

Maximum: 7%.

.3.2 Acidity (-/M/1.5)

Maximum: 0.4% calculated as H_2SO_4

.3.3 Water (-/M/1.6)

Maximum: 0.15%.

.3.4 Material Insoluble in Acetone (-/M/1.7)

Maximum: 0.5%.

.4 CONTAINERS

Fenthion technical must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for fenthion technical shall comply with DOT specification 17 C.

FENTHION EMULSIFIABLE CONCENTRATES

FAO Provisional Specification 79/5/(S)/3:

.1 DESCRIPTION AND IDENTITY

.1.1 Description

The product shall consist of an emulsifiable concentrate, based on fenthion as the only active ingredient together with suitable solvents and any necessary formulants. It shall be free from visible suspended matter and sediment.

It shall be formulated from fenthion complying with 79/1/(S)/3.

.1.2 Identity (79/5/m/1.2, Method not in CIPAC 1)

Shall comply.

.2 ACTIVE INGREDIENT

.2.1 Fenthion (-/m/1.4)

The fenthion content shall be declared (% w/w and/or g/l) and when determined, the percentage obtained shall not differ from the declared content by more than the following amounts:

Declared Content	Permitted Tolerance
Up to 50% w/w or 500 g/l	- 5 to + 7% of the declared content
50% w/w or 500 g/l and above	- 2.5 to + 3.5 percentage units or + 25 to + 35 g/l

.3 IMPURITIES

.3.1 bis-Methylthio-Compound (-/m/1.5)

Maximum: 7% of the fenthion content declared under .2.1.

.3.2 Acidity (-/M/1.6)

Maximum: 0.6% of the fenthion content declared under .2.1.

.3.3 Water (-/M/1.7)

Maximum: 0.15%.

.4 PHYSICAL PROPERTIES

.4.1 Emulsion Stability (-/M/1.8)

After the Heat Stability Test (.5.2) the product when diluted at 30°C (Note: Unless otherwise specified.) with the specified CIPAC Standard Waters, shall comply with the following:

Time After Dilution	Limits of Stability
0	Initial Emulsifiability, complete
0.5h	Maximum cream: 1 ml
2h	Maximum cream: 3 ml Maximum Free Oil: 1 ml
24h	Re-emulsification, complete
24.5h	Maximum cream: 2 ml Maximum Free Oil: 0.5 ml

The product shall be tested in Standard Water A and Standard Water C (Note: Unless other CIPAC Standard Waters are specified.).

.5 STORAGE STABILITY

.5.1 Low Temperature Stability (-/M/1.10)

After storage at 0°C for 7 days the volume of solid or liquid which separates shall be not more than 0.3%.

.5.2 Heat Stability (-/M/1.11)

After storage at 54 ± 2°C for 14 days the product shall continue to comply with .2.1, .3.2 (except that the maximum permitted acidity shall be 0.7% of the fenthion content found under .2.1), .4.1 and .5.1.

.6 CONTAINERS

Fenthion emulsifiable concentrates must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for fenthion emulsifiable concentrates shall comply with DOT specification 17 C.

DIAZINON TECHNICAL

Provisional Specification
(FAO Provisional Specification Draft, Code 15/1/(S)/4:)

.1 DESCRIPTION AND IDENTITY

.1.1 Description

The material shall consist essentially of diazinon and shall be a yellow to brown liquid, free from extraneous impurities or added modifying agents, with the exception of a stabilizer.

.1.2 Identity (15/1/M/1.7, method not in CIPAC 1)

Shall comply.

2 ACTIVE INGREDIENT

2.1 Diazinon (CIPAC 1, 15/1/M/1.2)

2.1.1 Minimum

Minimum content: without stabilizer, 95%
with stabilizer, 90%

2.1.2 Declared Content

The diazinon content shall be declared and when determined, the percentage obtained shall not differ from that declared by more ± 2 percentage units.

3 IMPURITIES

.3.1 Material Insoluble in Acetone (-/M/1.4)

Maximum: 0.15%

.3.2 Acidity (-/M/1.3)

Maximum: 0.03%, calculated as H_2SO_4

3.3 Water Content (-/M/1.5)

Maximum: 0.06%.

.4 CONTAINERS

Diazinon Technical must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for Diazinon Technical shall comply with DOT specification 5 B.

DIAZINON EMULSIFIABLE CONCENTRATE:

?rovisional Specification
(FAO Provisional Specification Draft, Code 15/5/(S)/4:)

.1 DESCRIPTION AND IDENTITY

.1.1 Description

The product shall consist of an emulsifiable concentrate, based on diazinon as the only active ingredient, together with suitable solvents and any necessary formulants. It shall be free from visible suspended matter and sediment.

It shall be formulated from diazinon technical complying with 15/1/(S)/4)

.1.2 Identity (15/5/m/1.11, method not in CIPAC 1)

Shall comply.

.2 ACTIVE INGREDIENT

.2.1 Diazinon (CIPAC 1, 15/5/M/1.3)

The diazinon content (% w/w and/or g/l at 20°C) shall be declared and when determined, the content obtained shall not differ from that declared by more than the following amounts:

Declared Content	Permitted Tolerance
Up to 40%	± 5% of the declared content
40% and above	± 2 percentage units

.3 IMPURITIES

.3.1 Acidity (-/M/1.4)

Maximum acidity: 0.05%, calculated as H_2SO_4

.3.2 Water (-/M/1.6)

Maximum: 0.2% (Note: Higher water content may cause corrosion of the container.)

.4 PHYSICAL PROPERTIES

.4.1 Emulsion Stability (-/M/1.8)

After the Heat Stability test (.5.2) the product, when diluted at 30°C (Note: Unless other temperatures are specified.) with the specified CIPAC Standard Waters, shall comply with the following:

Time After Dilution	Limits of Stability
0	Initial Emulsifiability, complete
0.5h	Cream: maximum 1 ml
2h	Cream: maximum 4 ml Free Oil: nil
24h	Re-emulsification, complete
24.5h	Cream: maximum 4 ml Free Oil: maximum 2 ml

The product shall be tested in Standard Water A and in Standard Water C (Note: Unless other CIPAC Standard Waters are specified.).

.5 STORAGE STABILITY

.5.1 Low Temperature Stability (-/M/1.7)

After storage at 0°C for 7 days the volume of solid or liquid which separates shall be not more than 0.3%.

.5.2 Heat Stability (-/M/1.9)

After storage at 65 ± 2°C for 14 days the product shall continue to comply with .2.1 (except that the minimum permitted diazinon content shall be 95% of that found under .2.1), .3.1, .4.1, and .5.1.

.6 CONTAINERS

Diazinon emulsifiable concentrates must be packaged in suitable, clean containers, which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for Diazinon emulsifiable concentrates shall comply with DOT specification 5 B.

DIAZINON WETTABLE (DISPERSIBLE) POWDERS

Provisional Specification
(FAO Provisional Specification Draft, Code 15/3/(S)/4:)

.1 DESCRIPTION AND IDENTITY

.1.1 Description

The product shall consist of a homogeneous mixture containing diazinon as the only active ingredient, together with fillers and any necessary formulants. It shall be a fine powder, free from visible extraneous materials and hard aggregates, and shall be white to cream unless otherwise agreed. It shall contain a suitable stabilizer.

It shall be formulated from diazinon technical complying with 15/1a/(S)/4.

.1.2 Identity (15/3/m/1.11, method not in CIPAC 1)

Shall comply.

.2 ACTIVE INGREDIENT

.2.1 Diazinon (CIPAC 1, 15/3/M/1.2)

The diazinon content shall be declared and when determined, the percentage obtained shall not differ from that declared by more than the following amounts:

Declared Content	Permitted Tolerance
Up to 40%	± 5% of the declared content
40% and above	± 2 percentage units

.3 IMPURITIES

.3.1 Acidity (-/M/1.3)

Maximum acidity: 0.3% calculated at H_2SO_4

.4 PHYSICAL PROPERTIES

.4.1 Wet Sieve Test (-/M/1.4)

Minimum: 98% through a 75 µm test sieve.

.4.2 Suspensibility (-/M/1.5)

A minimum of 50% of the diazinon content, declared under .2.1, shall be in suspension after 30 min in CIPAC Standard Water A (Note: This requirement shall not apply when the concentration of the diazinon in the spray is greater than 1%. Specification requirements and methods of determination for such cases are under consideration.) when tested on the product as received and in CIPAC Standard Water C after the Heat Stability test.

Alternatively, if the buyer requires other CIPAC Standard Waters to be used, then this shall be specified when ordering.

.4.3 Wettability of the Powder (-/M/1.6)

Shall be completely wetted in not more than 1 min without swirling.

.4.4 Persistent Foam (-/M/1.7)

Maximum: 25 ml after 1 min.

.5 STORAGE STABILITY

.5.1 Heat Stability (-/M/1.8)

After storage at 54 ± 2°C for 14 days the product shall continue to comply with .2.1 (except that the minimum permitted diazinon content shall be 95% of that found under .2.1). .3.1, .4.1, .4.2, and .4.3.

.6 CONTAINERS

Diazinon wettable (dispersible) powders must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box,

fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for Diazinon wettable (dispersible) powders shall comply with DOT specification 21 C.

DIAZINON DUSTS

Provisional Specification
(FAO Provisional Specification Draft, Code 15/2/(S)/4:)

.1 DESCRIPTION AND IDENTITY

.1.1 Description

The product shall consist of a homogeneous mixture containing technical diazinon as the only active ingredient, together with carriers and any necessary formulants. It shall be a fine, dustable material, free from visible extraneous materials and hard aggregates.

It shall be formulated from diazinon technical complying with 15/1/(S)/4.

.1.2 Identity (15/2/m/1.7, method not in CIPAC 1)

Shall comply.

.2 ACTIVE INGREDIENT

.2.1 Diazinon (CIPAC 1, 15/2/M/1.2)

The diazinon content shall be declared and when determined, the percentage obtained shall not differ from that declared by more than ± 10.0% of the declared content.

.3 IMPURITIES

.3.1 Acidity (-/M/1.3)

Maximum acidity: 0.1% calculated as H_2SO_4

.4 PHYSICAL PROPERTIES

.4.1 Dry Sieve Test (-/M/1.4)

Not less than 95% shall pass through a 75 µm test sieve. Not more than x% of any residue on the 75 µm sieve shall be diazinon, where x is the percentage

diazinon found under .2.1 Note: If the dust contains 5% diazinon and 1 g of residue is left on the sieve, then its maximum permitted diazinon content would be 0.05 g, i.e.,

$$\frac{x \times \text{weight of residue in sieve}}{100} \text{ g}$$

.5 STORAGE STABILITY

.5.1 Heat Stability (-/M/1.6)

After storage at 54 + 2°C for 14 days the product shall continue to comply with .2.1 (except that the minimum permitted diazinon content shall be 90% of that found under .2.1 for dusts over 3%, and 85% of that amount for dusts under 3%), .3.1 and .4.1.

.6 CONTAINERS

Diazinon dusts must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of

emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for Diazinon dusts shall comply with DOT specification 21 C.

DIAZINON GRANULES

Provisional Specification

.1 DESCRIPTION

The product shall contain diazinon as the only active ingredient, a suitable carrier and, if needed, other formulants. It shall consist of free flowing granules, free from visible extraneous matter and dust (except for the amount specified under .4.2).

It shall be formulated from diazinon complying with the specifications for "Diazinon Technical", Code 15/1/(S)/4.

.2 ACTIVE INGREDIENT

.2.1 Diazinon (CIPAC 1, 15/2/M/1.2)

The diazinon content shall be declared and when determined, the percentage obtained shall not differ from that declared by more than ± 8% of the declared content.

.2.2 Identity (15/2/m/1.7, Method not in CIPAC 1)

Shall comply.

.3 IMPURITIES

.3.1 Acidity (-/M/1.3)

Maximum acidity: 0.1% calculated as H_2SO_4

.4 PHYSICAL PROPERTIES

.4.1 Particle Size (Dry Sieve Test)

The size range of the particles shall be declared. The ratio of the lower to the upper declared limit shall not exceed 1 : 2.

Not less than 97% of the product shall pass through a test sieve having a mesh size of the upper declared limit. Not more than 5% of the product shall pass through a test sieve having a mesh size of the lower declared limit.

4.2 Dust

Not more than 1% of the product shall pass through a 75μ test sieve. The portion passing through this sieve shall not contain more than 8% of the active ingredient content per .2.1.

(Note: For example, if a product contains 5% of active ingredient, and 100 g of sample are used for the test, the dust portion must not contain more than 8% of 5 g = 0.4 g of active ingredient, and the rest of the sample not less than 4.6 g of active ingredient.)

.5 STORAGE STABILITY

.5.1 Heat Stability

After storage at 54 ± 2°C for 14 days, the product shall continue to comply with .2.1 (except that the minimum permitted diazinon content shall be 90% of that declared), .3.1, .4.1 and .4.2.

.6 CONTAINERS

Diazinon granules shall be packaged in suitable clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for diazinon granules shall comply with DOT specification 21 C or 12 C.

ETHION TECHNICAL

Provisional Specification

.1 DESCRIPTION

The material shall consist of ethion together with related manufacturing impurities, and shall be an amber liquid, free from extraneous impurities or added modifying agents.

.2 ACTIVE INGREDIENT

.2.1 Ethion (Method not in CIPAC or AOAC Handbooks; GLC method available from manufacturer.)

The ethion content (minimum: 95%) shall be declared and when determined, the content obtained shall not differ from that declared by more than ± 2 percentage units.

.2.2 Identity (Method not in CIPAC 1; TLC Method in JAOAC Vol. 46, p. 250)

Shall comply.

.3 IMPURITIES

.3.1 Acidity (CIPAC 1, MT 31, p. 902)

Maximum acidity: 0.3% calculated as H_2SO_4

.3.2 Material Insoluble in Acetone (CIPAC 1, MT 27, p. 894)

Maximum: 0.5%.

.3.3 Water (CIPAC 1, MT 30, p. 897)

Maximum: 0.2%.

.4 CONTAINERS

Ethion technical must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for ethion technical shall comply with DOT specification 17 C.

ETHION EMULSIFIABLE CONCENTRATES

Provisional Specification

.1 DESCRIPTION

The product shall consist of an emulsifiable concentrate, based on ethion as the only active ingredient, together with suitable solvents and any necessary formulants. It shall be free from visible suspended matter and sediment.

It shall be formulated from ethion complying with the specifications for "Ethion Technical".

.2 ACTIVE INGREDIENT

.2.1 Ethion (Method not in CIPAC or AOAC Handbooks; GLC Method available from manufacturer.)

The ethion content (% w/w and/or w/v at $20^{\circ}C = 68^{\circ}F$) shall be declared and when determined, the content obtained shall not differ from that declared by more than the following amounts:

Declared Content	Permitted Tolerance
Up to 40% or 400 g/l	± 5% of the declared content
Above 40% or 400 g/l	± 2 percentage units or ± 20 g/l

2.2 Identity (Method not in CIPAC 1; TLC Method in JAOAC Vol. 46, p. 250)

Shall comply.

3 IMPURITIES

3.1 Acidity (CIPAC 1, MT 31, p. 902)

Maximum acidity: 0.3% calculated as H_2SO_4

3.2 Water (CIPAC 1, MT 30, p. 897)

Maximum: 0.2%.

.4 PHYSICAL PROPERTIES

.4.1 Emulsion Stability (CIPAC 1, MT 36, p. 910)

After the Heat Stability Test (.5.2) the product, when diluted at 30°C (Note: Unless other temperatures are specified) with the specified CIPAC Standard Waters, shall comply with the following:

Time After Dilution	Limits of Stability
0	Initial Emulsifiability: complete
0.5h	Cream, maximum: 2 ml
2.0h	(Cream, maximum: 4 ml (Free Oil: nil
24.0h	Re-emulsification: complete
24.5h	(Cream, maximum: 4 ml (Free Oil, maximum: 0.5 ml

The product shall be tested in Standard Water A and in Standard Water C (Note: Unless other CIPAC Standard Waters are specified in the order) after the Heat Stability Test.

.4.2 Flash Point (CIPAC 1, MT 12, p. 846)

The flash point of the product shall not be lower than the minimum declared flash point. (Note: Attention is drawn to the appropriate national and international regulations on handling and transport of flammable materials.) The procedure used shall be stated.

.5 STORAGE STABILITY

.5.1 Low Temperature Stability (CIPAC 1, MT 39, p. 930)

After storage at 0°C for 7 days, the volume of solid or liquid which separates shall not be more than

0.3%. (Note: In cold climates it may be necessary to specify a lower temperature.)

.5.2 Heat Stability (CIPAC 1, MT 46.1.3, p. 952)

After storage at 54 ± 2°C for 14 days the concentrate shall continue to comply with .2.1, .3.1, .4.1 and .5.1.

.6 CONTAINERS

Ethion emulsifiable concentrates must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for ethion emulsifiable concentrates containing up to 4 lbs. of active ingredient per gallon are not subject to DOT regulation.

OXYDEMETON-METHYL TECHNICAL

Provisional Specification

.1 DESCRIPTION

The material shall consist of oxydemeton-methyl together with related manufacturing impurities, and shall be an amber liquid, free from extraneous impurities or added modifying agents.

.2 ACTIVE INGREDIENT

.2.1 Oxydemeton-methyl (Method not in CIPAC or AOAC Handbooks; Hydrolysis Method available from manufacturer.)

The oxydemeton-methyl content (minimum: 90%) shall be declared and when determined, the content obtained shall not differ from that declared by more than $\pm$ 2 percentage units.

.2.2 Identity (Method not in CIPAC or AOAC Handbooks; TLC Method available from manufacturer.)

Shall comply.

.3 IMPURITIES

.3.1 Acidity or Alkalinity (CIPAC 1, MT 31, p. 902)

Maximum acidity: 2.0% calculated as H_2SO_4

Maximum alkalinity: 0.01% calculated as NaOH

.3.2 Material Insoluble in Acetone (CIPAC 1, MT 27, p.894)

Maximum: 0.5%.

.3.3 Water (CIPAC 1, MT 30, p. 897)

Maximum: 1.0%.

Note:

Oxydemeton-methyl technical is not commercially available as such. The purpose of this specification is to define the quality of oxydemeton-methyl technical to be used in formulations.

OXYDEMETON-METHYL EMULSIFIABLE CONCENTRATES

Provisional Specification

.1 DESCRIPTION

The product shall consist of an emulsifiable concentrate, based on oxydemeton-methyl as the only active ingredient together with suitable solvents and any necessary formulants. It shall be free from visible suspended matter and sediment.

It shall be formulated from oxydemeton-methyl complying with the specifications for "Oxydemeton-methyl Technical".

.2 ACTIVE INGREDIENT

.2.1 Oxydemeton-methyl (Method not in CIPAC or AOAC Handbooks; Hydrolysis Method available from manufacturer.)

The oxydemeton-methyl content (% w/w and/or w/v at 20°C = 68°F) shall be declared and when determined, the content obtained shall not differ from that declared by more than the following amounts:

Declared Content	Permitted Tolerance
Up to 40% or 400 g/l	+ 28% to - 5% of the declared content
Above 40% or 400 g/l	+ 7 to -2 percentage units or + 70 to -20 g/l

.2.2 Identity (Method not in CIPAC or AOAC Handbooks; TLC Method available from manufacturer.)

Shall comply.

.3 IMPURITIES

.3.1 Acidity or Alkalinity (CIPAC 1, MT 31, p. 902)

Maximum acidity: 1.2% calculated as H_2SO_4

Maximum alkalinity: 0.01% calculated as NaOH

3.2 Water (CIPAC 1, MT 30, p. 897)

Maximum: 0.6%.

4 PHYSICAL PROPERTIES

4.1 Emulsion Stability (CIPAC 1, MT 36, p. 910)

After the Heat Stability Test (.5.2) the product, when diluted at 30°C (Note: Unless other temperatures are specified) with the specified CIPAC Standard Waters, shall comply with the following:

Time After Dilution	Limits of Stability
0	Initial Emulsifiability: complete
0.5h	Cream, maximum: 2 ml
2.0h	(Cream, maximum: 4 ml (Free Oil: nil
24.0h	Re-emulsification: complete
24.5h	(Cream, maximum: 4 ml (Free Oil, maximum: 0.5 ml

The product shall be tested in Standard Water A and in Standard Water C (Note: Unless other CIPAC Standard Waters are specified in the order) after the Heat Stability Test.

.4.2 Flash Point (CIPAC 1, MT 12, p. 846)

The flash point of the product shall not be lower than the minimum declared flash point. (Note: Attention is drawn to the appropriate national and international regulations on handling and transport of flammable materials.) The procedure used shall be stated.

.5 STORAGE STABILITY

.5.1 Low Temperature Stability (CIPAC 1, MT 39, p. 930)

After storage at 0°C for 7 days the volume of solid or liquid which separates shall not be more than 0.3%. (Note: In cold climates it may be necessary to specify a lower temperature.)

.5.2 Heat Stability (CIPAC 1, MT 46.1.3, p. 952)

After storage at 54 ± 2°C for 14 days (Note: If the product contains more than 300 g/l of active ingredient, the storage period should be 7 days), the product shall continue to comply with .2.1 (except that the minimum permitted content shall be 85% of that declared under .2.1) and with .3.1 (except that the maximum permitted acidity shall be 2.0%).

.6 CONTAINERS

Oxydemeton-methyl emulsifiable concentrates must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for oxydemeton-methyl emulsifiable concentrates shall comply with DOT specification 17 C.

AZINPHOS-METHYL TECHNICAl

FAO Specification Code 37.a/1/S/3:

.1 DESCRIPTION

The material shall consist, essentially, of azinphos-methyl in the form of a yellow crystalline material.

.2 ACTIVE INGREDIENT

.2.1 Azinphos-methyl (See CIPAC 1, p. 25, section 1.2, method 37.a/1/(M)/1.2)

The azinphos-methyl content shall be declared (minimum: 87%) and, when determined, the content obtained shall not differ from that declared by more than ± 2.5 percentage units.

.2.2 Freezing Point (Ibid, p. 26, section 1.4)

Minimum: 61°C

.3 IMPURITIES

.3.1 Acidity or Alkalinity (Ibid, p. 26, section 1.5)

Maximum acidity: 0.5%, calculated as H_2SO_4

Maximum alkalinity: 0.3%, calculated as NaOH

.3.2 Material Insoluble in Acetone (Ibid, p. 26 section 1.6)

Maximum: 0.5%

.3.3 Water (Ibid, p. 26, section 1.7)

Maximum: 0.2%

AZINPHOS-METHYL EMULSIFIABLE CONCENTRATES

FAO Specification Code 37.a/5/S/3:

.1 DESCRIPTION

The product shall consist of an emulsifiable concentrate based on azinphos-methyl as the only active ingredient, together with suitable solvents and any necessary formulants. The concentrate shall be free from visible suspended matter and sediment.

It shall be formulated from azinphos-methyl complying with the specification for "Azinphos-Methyl Technical", 37.a/1/S/3.

.2 ACTIVE INGREDIENT

.2.1 Azinphos-methyl (See CIPAC 1, p. 30, section 1.2, method 37.a/5/(M)/1.2)

The azinphos-methyl content (% w/w and/or g/l at 20°C) shall be declared and, when determined, the content obtained shall not differ from that declared by more than ± 6% of the declared content.

.3 IMPURITIES

.3.1 Acidity or Alkalinity (Ibid, p. 30, section 1.4)

Maximum acidity: 0.5%, calculated as H_2SO_4

Maximum alkalinity: 0.2%, calculated as NaOH

.3.2 Water (Ibid, p. 30, section 1.6 - Note: Higher water content may cause corrosion of the containers.)

Maximum: 0.2%

.4 PHYSICAL PROPERTIES

.4.1 Emulsion Stability (Ibid, p. 30, section 1.8)

After the Heat Stability test (.5.2), the product, when diluted at 30°C (Note: Unless other temperatures

are specified. Difficulties may arise in reading the amount of cream because of a lack of a definite interfacial boundary between the layers.) with the specified CIPAC Standard Waters, shall comply with the following:

Time after Dilution	Limits of Stability
0	Initial Emulsifiability: complete
0.5h	Cream: maximum 4 ml
2.0h	(Cream: maximum 8 ml (Free Oil: nil
24.0h	Re-emulsification: complete
24.5h	(Cream: maximum 12 ml (Free Oil: maximum nil

The product shall be tested in Standard Water A and in Standard Water C (Note: Unless other CIPAC Standard Waters are specified.) after the Heat Stability test.

.5 STORAGE STABILITY

.5.1 Low Temperature Stability (Ibid, p.30, section 1.7)

After storage at 5°C (Note: If the product is stored below 5°C, it will need to be made homogeneous by stirring before use.) for 7 days, the volume of solid or liquid which separates shall be not more than 0.3%.

.5.2 Heat Stability (Ibid, p. 29, section 1.9)

After storage at 54 ± 2°C for 14 days the product shall continue to comply with .2.1 (except that the minimum permitted azinphos-methyl content shall be 92.5% of that found under .2.1), .3.1 and .4.1.

.6 CONTAINERS

Azinphos-methyl emulsifiable concentrates must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for Azinphos-methyl emulsifiable concentrates shall comply with DOT specification 17 E.

MEVINPHOS TECHNICAL

Provisional Specification

.1 DESCRIPTION

The material shall consist of mevinphos together with related manufacturing impurities, and shall be a clear liquid, light yellow to orange in color, free from extraneous impurities or added modifying agents.

.2 ACTIVE INGREDIENT

.2.1 Mevinphos (Method not in CIPAC or AOAC Handbooks; IR Method available from manufacturer.)

Mevinphos contains no less than 60% w of the alpha-isomer of dimethyl phosphate of methyl 3-hydroxycrotonate, and no more than 40% w insecticidally active related products determined by difference.

Minimum active ingredient content: 95%.

The alpha-isomer content (min. 60% w) shall be declared and when determined the content obtained shall not differ from that declared by more than -2 percentage units for alpha-isomer and +2 percentage units for related components.

.2.2 Identity (Method not in CIPAC 1, IR Method available from manufacturer.)

Shall comply.

.3 IMPURITIES

.3.1 Material Insoluble in Water (CIPAC 1, MT 10, p. 843)

Maximum: 0%.

.3.2 Material Insoluble in Xylene (CIPAC 1, MT 11, p. 845)

Maximum: 0%.

.3.3 Particulate Matter

On visual inspection, no particulate matter shall be present.

.3.4 Methyl-2-chloroacetoacetate (Method not in CIPAC 1, GLC Method available from manufacturer.)

Maximum: 1%.

.3.5 Trimethyl phosphite (Method not in CIPAC 1, GLC Method available from manufacturer.)

Maximum: 1%.

.4 CONTAINERS

Mevinphos technical must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents of container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for mevinphos technical shall comply with DOT specification 17 C, and with DOT Code Section 173.358.

MEVINPHOS EMULSIFIABLE CONCENTRATES

Provisional Specification

.1 DESCRIPTION

The product shall consist of an emulsifiable concentrate, based on mevinphos as the only active ingredient, together with suitable solvents and any necessary formulants. It shall be free from visible suspended matter and sediment.

It shall be formulated from mevinphos complying with the specifications for "Mevinphos Technical".

.2 ACTIVE INGREDIENT

.2.1 Mevinphos (Method not in CIPAC or AOAC Handbooks; IR Method available from manufacturer.)

The mevinphos content (% w/w and/or w/v at $20^{\circ} = 68^{\circ}F$) shall be declared and when determined, the content obtained shall not differ from that declared by more than the following amounts:

Declared Content	Permitted Tolerance
Up to 40% or 400 g/l	± 5% of the declared content
Above 40% or 400 g/l	± 2 percentage units or ± 20 g/l

.2.2 Identity (Method not in CIPAC 1, IR Method available from manufacturer.)

Shall comply.

.3 IMPURITIES

.3.1 Acidity (CIPAC 1, MT 31, p. 902)

Maximum acidity: 1.0% calculated as H_2SO_4

.3.2 Water (CIPAC 1, MT 30, p. 897)

Maximum: 0.2%.

.3.3 Methyl-2-chloroacetoacetate (Method not in CIPAC 1, GLC Method available from manufacturer.)

Maximum: 0.5%.

.3.4 Trimethyl phosphite (Method not in CIPAC 1, GLC Method available from manufacturer.)

Maximum: 0.5%.

.4 PHYSICAL PROPERTIES

.4.1 Emulsion Stability (CIPAC 1, MT 36, p. 910)

After the Heat Stability Test (.5.2) the product, when diluted at 30°C (Note: Unless other temperatures are specified) with the specified CIPAC Standard Waters, shall comply with the following:

Time After Dilution	Limits of Stability
0	Initial Emulsifiability: complete
0.5h	Cream, maximum: 2 ml
2.0h	(Cream, maximum: 4 ml (Free Oil: nil
24.0h	Re-emulsification: complete
24.5h	(Cream, maximum: 4 ml (Free Oil, maximum: 0.5 ml

The product shall be tested in Standard Water A and in Standard Water C (Note: Unless other CIPAC Standard Waters are specified in the order) after the Heat Stability Test.

.4.2 Flash Point (CIPAC 1, MT 12, p. 846)

The flash point of the product shall not be lower than the minimum declared flash point.

(Note: Attention is drawn to the appropriate national and international regulations on handling and transport of flammable materials.) The procedure used shall be stated.

.5 STORAGE STABILITY

.5.1 Low Temperature Stability (CIPAC 1, MT 39, p. 930)

After storage at 0°C for 7 days, the volume of solid or liquid which separates shall not be more than 0.3%. (Note: In cold climates it may be necessary to specify a lower temperature.)

.5.2 Heat Stability (CIPAC 1, MT 46.1.3, p. 952)

After storage at 54 ± 2°C for 14 days, the concentrate shall continue to comply with .2.1, .3.1, .3.3, .3.4, .4.1 and .5.1.

6 CONTAINERS

Mevinphos emulsifiable concentrates must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for mevinphos emulsifiable concentrates shall comply with DOT specification 17 C for metal containers; 12 B for fiberboard boxes to overpack glass bottles up to 1 gal.

PARATHION-METHYL TECHNICAL

FAO Specification Code 10.a/1/S/3:

.1 DESCRIPTION

The material shall consist, essentially, of parathion-methyl and shall be a liquid or solid, free from extraneous materials or added modifying agents.

.2 ACTIVE INGREDIENT

.2.1 Parathion-methyl (See CIPAC 1, p. 569, section 1.2)

The parathion-methyl content (% w/w) shall be declared (minimum: 90.0%) and, when determined, the percentage obtained shall not differ from that declared by more than ± 2 percentage units.

.2.2 Identity (Ibid, p. 570, section 1.3)

To be determined by thin layer chromatography.

.3 IMPURITIES

.3.1 Acidity (Ibid, p. 570, section 1.4)

Maximum acidity: 0.3%, calculated as H_2SO_4

.3.2 Material Insoluble in Acetone (Ibid, p. 571, section 1.5)

Maximum: 0.5%

.3.3 Free p-Nitrophenol and p-Nitrophenol from easily hydrolysed Impurities (Ibid, p.570, section 1.2(b))

Maximum: 2.0% (calculated as p-nitrophenol).

.3.4 Parathion (Ibid, p. 570, section 1.3)

Maximum: 0.1%

.3.5 Water (Ibid, p. 571, section 1.6)

Maximum: 0.3%.

.5 EXPLOSION HAZARDS

The technical material tends to set to a solid of m.p. about 29°C. It must be heated to melting point, before formulating. A suitable temperature for this purpose is 55°C, maintained, e.g., on a water bath. The material may explode if heated above 100°C. Accordingly, local overheating must be avoided.

PARATHION-METHYL TECHNICAL SOLUTIONS

FAO Specification Code 10.a/1a/S/3:

.1 DESCRIPTION

The material shall consist, essentially, of parathion-methyl and, at temperatures above 18°C, shall be a liquid, free from extraneous materials, except for the solvent (Note: Parathion-methyl technical is usually supplied in the form of a concentrate, containing up to 20% of an organic solvent which is added for the purpose of maintaining fluidity of the product.).

.2 ACTIVE INGREDIENT

.2.1 Parathion-methyl (See CIPAC 1, p. 569, section 1.2) Note: Methods of analysis for "parathion-methyl technical solutions" are not included in CIPAC Handbook 1. However, those listed under "parathion-methyl technical" are also suitable for "parathion-methyl technical solutions" and should be used for both products, as indicated in the text.)

The parathion-methyl content (% w/w and/or g/l at 20°C) shall be declared (minimum 80.0%) and, when determined, the percentage obtained shall not differ from that declared by more than ± 2 percentage units.

.2.2 Identity (Ibid, p. 570, section 1.3)

To be determined by thin layer chromatography.

.3 IMPURITIES

.3.1 Acidity (Ibid, p. 570, section 1.4)

Maximum: 0.3%, calculated as H_2SO_4

.3.2 Material Insoluble in Acetone (Ibid, p. 571, section 1.5)

Maximum: 0.5%

.3.3 Free p-Nitrophenol and p-Nitrophenol from easily hydrolysed Impurities (Ibid, p. 570, section 1.2(b))

Maximum: 2.0% (calculated as p-nitrophenol).

.3.4 Parathion (Ibid, p. 570, section 1.3)

Maximum: 0.1%

.3.5 Water (Ibid, p. 571, section 1.6)

Maximum: 0.3%

.5 EXPLOSION HAZARD

Parathion-methyl may explode violently if heated above 100°C. If stored under cold conditions, however, parathion-methyl will crystallize out, from the concentrate, in the form of a hard cake. In order to reconstitute it, the product must then be heated above the crystallization temperature and agitated in order to achieve uniformity. A suitable temperature for this purpose is 55°C, maintained on a water bath. It should be noted that it is not sufficient merely to liquify the mass. Furthermore, local overheating must be avoided.

.6 CONTAINERS

Parathion-methyl technical solutions must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for parathion-methyl technical solutions shall comply with DOT specification 5 B or 17 C (over 5 gallons), or DOT 17 E (5 gallons or less).

PARATHION-METHYL EMULSIFIABLE CONCENTRATES

FAO Specification Code 10.a/5/S/3:

.1 DESCRIPTION

The product shall consist of an emulsifiable concentrate, based on parathion-methyl as the only active ingredient, together with suitable solvents and any necessary formulants. It shall be free from visible suspended matter and sediment.

It shall be formulated from parathion-methyl complying with the specification for "Parathion-methyl Technical", Code 10.a/1 or 1a/S/3.

.2 ACTIVE INGREDIENT

.2.1 Parathion-Methyl (See CIPAC 1, p. 579, section 1.3)

The parathion-methyl content (% w/w and/or g/l at 20°C) shall be declared and, when determined, the content obtained shall not differ from that declared by more than the following amounts:

Declared Content	Permitted Tolerance
Up to 40% or 400 g/l	± 5% of the declared content
Above 40% or 400 g/l	± 2 percentage units or ± 20 g/l

.2.2 Identity (Ibid, p. 580, section 1.4)

To be determined by thin layer chromatography.

.3 IMPURITIES

.3.1 Acidity or Alkalinity (Ibid, p. 580, section 1.5)

Maximum acidity: 0.4%, calculated as H_2SO_4

Maximum alkalinity: 0.1%, calculated as NaOH

.3.2 Free p-Nitrophenol and p-Nitrophenol from easily Hydrolysed Impurities (Ibid, p. 580, section 1.3(b))

Maximum: 2.0% (calculated as p-nitrophenol) of the parathion-methyl content found under .2.1

.3.3 Parathion (Ibid, p. 580, section 1.4)

Maximum: 0.1%

.3.4 Water (Ibid, p. 580, section 1.7)

Maximum: 0.3%

4 PHYSICAL PROPERTIES

4.1 Emulsion Stability (Ibid, p. 581, section 1.9)

After the Heat Stability test (.5.2), the product, when diluted at 30°C (Note: Unless another temperature is agreed.) with the specified CIPAC Standard Waters, shall comply with the following:

Time After Dilution	Limits of Stability
0	Initial Emulsifiability: complete
0.5h	Cream: maximum 2 ml
2.0h	(Cream: maximum 4 ml (Free Oil: nil
24.0h	Re-emulsification: complete
24.5h	(Cream: maximum 4 ml (Free Oil: maximum 0.5 ml

The product shall be tested in Standard Water A and in Standard Water C (Note: Unless other CIPAC Waters are specified) after the Heat Stability test.

.5 STORAGE STABILITY

.5.1 Low Temperature Stability (Ibid, p. 580, section 1.8)

After storage at 5°C for 7 days, the volume of solid or liquid which separates shall be not more than 0.3% (Note: In cold climates it may be necessary to specify a lower temperature.).

.5.2 Heat Stability (Ibid, p. 581, section 1.10)

After storage at 54 ± 2°C for 14 days, the concentrate shall continue to comply with .2.1 (except that the minimum permitted parathion-methyl content shall be 97.5% of that found under .2.1), and shall also comply with .3.1, .3.2 (except that the maximum permitted p-nitrophenol content shall be 4% of the parathion-methyl content found under .2.1), and with .4.1 and .5.1.

.6 CONTAINERS

Parathion-methyl emulsifiable concentrates must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for parathion-methyl emulsifiable concentrates shall comply with DOT specification 5 B or 17 C (over 10 gallons), or DOT 17 E (10 gallons or less).

PARATHION TECHNICAL

FAO Specification Code 10.b/1/S/3

.1 DESCRIPTION

The material shall consist, essentially, of parathion and shall be a liquid, free from extraneous materials or added modifying agents.

.2 ACTIVE INGREDIENT

.2.1 Parathion (See CIPAC Handbook 1, p. 551, section 1.2)

The parathion content (% w/w) shall be declared (minimum: 95%) and, when determined, the percentage obtained shall not differ from that declared by more than ± 2 percentage units.

.2.2 Identity (Ibid, p. 555, section 1.3)

To be determined by thin layer chromatography,

.3 IMPURITIES

.3.1 Acidity (Ibid, p. 555, section 1.4)

Maximum acidity: 0.3%, calculated as H_2SO_4

.3.2 Material Insoluble in Acetone (Ibid, p. 555, section 1.5)

Maximum: 0.1%.

.3.3 Free p-Nitrophenol and p-Nitrophenol from easily hydrolysed Impurities (Ibid, p. 553, section 1.2(b))

Maximum: 1.0% (calculated as p-nitrophenol).

.3.4 Water (Ibid, p. 556, section 1.6)

Maximum: 0.2%

.4 CONTAINERS

Parathion Technical must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for parathion technical shall comply with DOT specification 5 B or 17 C (over 10 gallons), or DOT 17 E (10 gallons or less).

PARATHION EMULSIFIABLE CONCENTRATES

FAO Specification Code 10.b/5/S/3

.1 DESCRIPTION

The product shall consist of an emulsifiable concentrate, based on parathion as the only active ingredient, together with suitable solvents and any necessary formulants. It shall be free from visible suspended matter and sediment.

It shall be formulated from parathion complying with the specification for "Parathion Technical", Code 10.b/1/S/3.

.2 ACTIVE INGREDIENT

.2.1 Parathion (See CIPAC Handbook 1, p. 563, section 1.3)

The parathion content shall be declared (% w/w and/or g/l at 20°C) and, when determined, the content obtained shall not differ from that declared by more than the following amounts:

Declared Content	Permitted Tolerance
Up to 40% or 400 g/l	± 5% of the declared content
Above 40% or 400 g/l	± 2 percentage units or ± 20 g/l

.2.2 Identity (Ibid, p. 565, section 1.4)

To be determined by thin layer chromatography,

.3 IMPURITIES

.3.1 Acidity or Alkalinity (Ibid, p. 565, section 1.5)

Maximum acidity: 0.3% calculated as H_2SO_4

Maximum alkalinity: 0.1% calculated as NaOH

.3.2 Free p-Nitrophenol and p-Nitrophenol from easily hydrolysed Impurities (Ibid, p. 564, section 1.3(b))

Maximum: 1.0% (calculated as p-nitrophenol) of the parathion found under .2.1

.3.3 Water (Ibid, p. 565, section 1.7)

Maximum: 0.2%.

.4 PHYSICAL PROPERTIES

.4.1 Emulsion Stability (Ibid, p. 565, section 1.9)

After the Heat Stability test (.5.2), the product, when diluted at 30°C (Note: Unless another temperature is specified.) with the specified Standard Waters, shall comply with the following:

Time After Dilution	Limits of Stability
0	Initial Emulsifiability: complete
0.5h	Cream: maximum 2 ml
2.0h	(Cream: maximum 4 ml (Free Oil: nil
24.0h	Re-emulsification: complete
24.5h	(Cream: maximum 4 ml (Free Oil: maximum 0.5 ml

The product shall be tested in Standard Water A and in Standard Water C (Note: Unless other CIPAC Standard Waters are specified.) after the Heat Stability test.

.5 STORAGE STABILITY

.5.1 Low Temperature Stability (Ibid, p. 565, section 1.8)

After storage at 0°C for 7 days, the volume of solid or liquid which separates shall be not more than 0.3%.

.5.2 Heat Stability (Ibid, p. 565, section 1.10)

After storage at 54 ± 2°C for 14 days, the product shall continue to comply with .2.1, .3.1, .3.2, .4.1, and .5.1.

.6 CONTAINERS

Parathion emulsifiable concentrates must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for parathion emulsifiable concentrates shall comply with DOT specification 5 B or 17 C (over 10 gallons), or DOT 17 E (10 gallons or less).

PARATHION GRANULES

Provisional Specification

.1 DESCRIPTION

The product shall contain parathion as the only active ingredient, a suitable carrier and if needed, other formulants. It shall consist of free flowing granules, free from visible extraneous matter and dust (except for the amount specified under .4.2).

It shall be formulated from parathion technical complying with FAO Specification 10.b/1/S/3.

.2 ACTIVE INGREDIENT

.2.1 Parathion (CIPAC 1, 10.b/2/M/1.2, p. 556)

The parathion content shall be declared and when determined, the percentage obtained shall not differ from that declared by more than ± 8% of the declared content.

.2.2 Identity (CIPAC 1, 10.b/2/M/1.3)

Shall comply.

.3 IMPURITIES

.3.1 Acidity or Alkalinity (CIPAC 1, MT 31, p. 902)

Maximum acidity: 0.1% calculated as H_2SO_4

Maximum alkalinity: 0.2 calculated as NaOH

.3.2 Free p-Nitrophenol and p-Nitrophenol from easily hydrolysed impurities (CIPAC 1, p. 557, section 1.2(b))

Maximum: 1.0% (calculated as p-nitrophenol) of the parathion content found under .2.1.

.4 PHYSICAL PROPERTIES

.4.1 Particle Size (Dry Sieve Test)

The size range of the particles shall be declared. The ratio of the lower to the upper declared limit shall not exceed 1 : 2.

Not less than 97% of the product shall pass through a test sieve having a mesh size of the upper declared limit. Not more than 5% of the product shall pass through a test sieve having a mesh size of the lower declared limit.

.4.2 Dust

Not more than 1% of the product shall pass through a 75u test sieve. The portion passing through this sieve shall not contain more than 8% of the active ingredient content per .2.1.

(Note: For example, if a product contains 5% of active ingredient, and 100 g of sample are used for the test, the dust portion must not contain more than 8% of 5 g = 0.4 g of active ingredient, and the rest of the sample not less than 4.6 g of active ingredient.)

.5 STORAGE STABILITY

.5.1 Heat Stability

After storage at 54 ± 2°C for 14 days, the product shall continue to comply with .2.1, .3.1, .3.2, .4.1 and .4.2.

.6 CONTAINERS

Parathion granules shall be packaged in suitable clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination,

oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for parathion granules shall comply with the following DOT specifications:

Over 2% but not over 27% active ingredient
DOT 17 C or 17 H, or 37 A (not over 100 lbs. net), or DOT 21 C Fiber Drum (not over 250 lbs. net)

Over 27% active ingredient
DOT 12 B, 12 C Fiberboard Boxes with metal cans not over 12 lbs. net each

DOT 5, 5 B, 6 A or 6 C, 17 C, 17 H or 37 A (not over 100 lbs. net); DOT 21 C (not over 225 lbs. net).

DOT 44 B multi-wall paper bags with inside paper bags DOT 2 D, not over 5 lbs. net capacity each - net weight of material in outside container not over 30 lbs. net each.

DOT 12 B with 0.003 inch polyethylene bags, net weight not over 50 lbs. net.
Over 2% but less than 5% active ingredient
DOT 44 D (not over 50 lbs. net)
Over 2% but less than 12% active ingredient
DOT 44 D (not over 50 lbs. net), outer ply 60 pound basis weight.

DDT TECHNICAL

FAO Specification Code 3/1/S/4:

.1 DESCRIPTION

The material shall consist, predominantly, of pp'-DDT as white or cream colored granules, flakes or powder, free from extraneous impurities or added modifying agents.

.2 ACTIVE INGREDIENT

.2.1 pp'-DDT Content (See CIPAC 1, p. 281, section 1.5)

Minimum: 70%.

.2.2 Melting Point of Extracted pp'-DDT (Ibid, p.283, section 1.6)

Minimum: 104°C.

.2.3 Freezing Point (Ibid, p. 280, section 1.2)

The minimum freezing point (not less than 89°C) of the material shall be declared. (Note: Where this technical material is intended for use in formulating dispersible powders, it shall have a minimum freezing point of 91°C; except for 75% dispersible powders, where it shall be 92°C.)

.2.4 Hydrolysable Organic Chlorine (Ibid, p. 281, section 1.4)

Minimum: 9.5%.

Maximum: 11.5%.

.2.5 Organic Chlorine (Ibid, p. 281, section 1.3)

Minimum: 49.0%.

Maximum: 51.0%.

.3 IMPURITIES

.3.1 Chloral Hydrate (Ibid, p. 283, section 1.8)

Maximum 0.025%.

.3.2 Acidity (Ibid, p. 283, section 1.7)

Maximum: 0.3%, calculated as H_2SO_4

.3.3 Material Insoluble in Acetone (Ibid, p. 284, section, 1.9)

Maximum: 1.0%.

.3.4 Volatile Substances (including water) (Ibid, p. 284, section 1.10)

Maximum: 1.0%.

.4 CONTAINERS

DDT technical shall be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

DDT WETTABLE (DISPERSIBLE) POWDERS

FAO Specification Code 3/3/S/4:

.1 DESCRIPTION

The product shall consist of a homogeneous mixture containing DDT as the only active ingredient, together with fillers and any necessary formulants. It shall be a fine powder, free from visible extraneous materials and hard aggregates, and white to cream in color unless otherwise agreed. (Note: In some countries, there is a legal requirement that these products shall be colored.)

It shall be formulated from DDT complying with the specification for "DDT Technical".

.2 ACTIVE INGREDIENT

.2.1 DDT (See CIPAC 1, p. 288, section 1.4)

The DDT content shall be declared and, when determined, the percentage obtained shall not differ from that declared by more than the following amounts:

Declared Content	Permitted Tolerance
Up to 40%	± 5% of the declared content
Above 40%	± 2 percentage units

.2.1 pp'-DDT (Ibid, p. 287, section 1.3)

Minimum: 70% of the DDT found under .2.1. (Note: For 30% DDT, the minimum permitted pp'-DDT content would be 21.0%).

.3 IMPURITIES

.3.1 Acidity or Alkalinity (Ibid, p. 288, section 1.5)

Maximum acidity: 0.2%, calculated as H_2SO_4

Maximum alkalinity: 0.2%, calculated as NaOH

.4 PHYSICIAL PROPERTIES

.4.1 Wet Sieve Test (Ibid, p. 288, section 1.6)

Minimum: Not less than 98% of the product shall pass through a 75 µm test sieve.

.4.2 Suspensibility (Ibid, p. 289, section 1.7)

A minimum of 50% of the DDT content, declared under .2.1, shall be in suspension after 30 min. in CIPAC Standard Water A (Note: This requirement shall not apply when the concentration of DDT in the dilute spray is greater than 2%. Specification requirements and methods of determination for those cases are under consideration.), when determined on the product as received, and in CIPAC Standard Water D, after the Heat Stability Test.

Alternatively, if the buyer requires other CIPAC Standard Waters to be used, he should specify accordingly when ordering.

.4.3 Wettability of the Product (Ibid, p. 290, section 1.8)

It shall be completely wetted in 1 min.

.4.4 Persistent Foaming (Ibid, p. 290, section 1.9)

(Note: These are provisional limits.)

Maximum: 25 ml of foam after 1 min.

.5 STORAGE STABILITY

.5.1 Heat Stability (Ibid, p. 290, section 1.10)

After storage at 54 ± 2°C for 14 days, the product shall continue to comply with .2.1, .3.1, .4.1, .4.2 and .4.3.

.6 CONTAINERS

DDT wettable (dispersible) powders shall be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for DDT wettable (dispersible) powders are not subject to DOT regulation.

BHC TECHNICAL

Provisional Specification
(FAO Specification Code 4/1/S/3:)

.1 DESCRIPTION

The material shall consist of a mixture of isomers of benzene hexachloride, and shall be white to light brown granules, flakes or powder, free from extraneous materials of added modifying agents.

.2 ACTIVE INGREDIENT

.2.1 gamma-BHC (CIPAC 1, 4/1/M1/1.4)

The gamma-BHC content (minimum: 12.0% - maximum: 16.0%) shall be declared and when determined the result obtained shall not differ from that declared by more than ± 5% of the declared content.

.3 IMPURITIES

.3.1 Acidity (-/M1/1.6)

Maximum: 0.15% calculated as H_2SO_4

.3.2 Material Insoluble in Acetone (-/M1/1.5)

Maximum: 1.0%.

.3.3 Loss on Drying at 60°C (-/M1/1.2)

Maximum: 1.0%.

.4 CONTAINERS

BHC Technical must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an

inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

BHC REFINED

Provisional Specification
(FAO Specification Code 4/1a/S/4:)

.1 DESCRIPTION

The material shall consist of a mixture of isomers of benzene hexachloride, and shall be white to light brown granules, flakes or powder, free from extraneous materials or added modifying agents.

.2 ACTIVE INGREDIENT

.2.1 gamma-BHC (CIPAC 1, 4/1a/M/1.4)

The gamma-BHC content (minimum: 16.1% - maximum: 98.9%) shall be declared and when determined the result obtained shall not differ from that declared by more than ± 5% of the declared content.

.3 IMPURITIES

3.1 Acidity (-/M/1.6)

Maximum: 0.15% calculated as H_2SO_4

3.2 Material Insoluble in Acetone (-/M/1.5)

Maximum: 1.0%.

3.3 Loss on Drying at 60°C (-/M/1.2)

Maximum: 1.0%.

4 CONTAINERS

BHC Refined must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation,

compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

BHC WETTABLE (DISPERSIBLE) POWDERS

Provisional Specification
(FAO Specification Code 4/3/S/4:)

.1 DESCRIPTION

The product shall consist of a homogeneous mixture containing BHC (technical, or refined) as the sole active ingredient together with fillers and any necessary formulants. It shall be a fine powder, free from visible extraneous materials and hard aggregates, and white to cream, unless otherwise agreed.

It shall be formulated from BHC complying with either 4/1/S/3 or 4/1a/S/4.

.2 ACTIVE INGREDIENT

.2.1 BHC (CIPAC 1, 4/3/M/1.3)

The maximum BHC content shall be declared and when determined the percentage obtained shall be not more than 105% of that declared.

.2.2 gamma-BHC (-/M/1.4)

The gamma-BHC content shall be declared and when determined the percentage obtained shall not differ from that declared by more than ± 15% of the declared content.

.3 IMPURITIES

.3.1 Acidity or Alkalinity (-/M/1.5)

Maximum acidity: 0.2%, calculated as H_2SO_4

Maximum alkalinity: 0.2%, calculated as NaOH

.4 PHYSICAL PROPERTIES

.4.1 Wet Sieve Test (-/M/1.6)

Minimum: 98% through a 75 µm test sieve.

.4.2 Suspensibility (-/M/1.7)

A minimum of 50% of the BHC content, declared under .2.1, shall be in suspension after 30 min in CIPAC Standard Water A (Note: This requirement shall not apply when the BHC concentration in the spray is greater than 2%. Specification requirements and methods of determination for such cases are under consideration.), when determined on the product as received, and in CIPAC Standard Water D after the Heat Stability test.

Alternatively, if the buyer requires other CIPAC Standard Waters to be used, then this shall be specified when ordering.

.4.3 Wettability of the Product (-/M/1.8)

Shall be completely wetted in 1 min.

.4.4 Persistent Foam (-/M/1.9)

Maximum: 25 ml after 1 min.

.5 STORAGE STABILITY

.5.1 Heat Stability (-/M/1.10)

After storage at 54 ± 2°C for 14 days the product shall continue to comply with .2.1, .3.1, .4.1, .4.2 and .4.3.

.6 CONTAINERS

BHC wettable (dispersible) powders must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative

means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

BHC GRANULES

Provisional Specification

.1 DESCRIPTION

The product shall contain BHC (technical or refined) as the only active ingredient, a suitable carrier and, if needed, other formulants. It shall consist of free flowing granules, free from visible extraneous matter and dust (except for the amount specified under .4.2).

It shall be formulated from BHC complying with either 4/1/S/3 or 4 1a/S/4.

.2 ACTIVE INGREDIENT

.2.1 BHC (CIPAC 1, 4/2/M/1.3) The maximum BHC content shall be declared and when determined, the percentage obtained shall not be more than 105% of that declared.

.2.2 gamma-BHC (-M/1.4)

The gamma-BHC content shall be declared and when determined, the percentage obtained shall not differ from that declared by more than ± 15% of the declared content.

.3 IMPURITIES

.3.1 Acidity or Alkalinity (CIPAC 1, -/M/1.5)

Maximum acidity : 0.1% calculated as H_2SO_4

Maximum alkalinity : 0.2% calculated as NaOH

.4 PHYSICAL PROPERTIES

.4.1 Particle Size (Dry Sieve Test)

The size range of the particles shall be declared. the ratio of the lower to the upper declared limit shall not exceed 1 : 2.

Not less than 97% of the product shall pass through a test sieve having a mesh size of the upper declared limit. Not more than 5% of the product shall pass through a test sieve having a mesh size of the lower declared limit.

.4.2 Dust

Not more than 1% of the product shall pass through a 75μ test sieve. The portion passing through this sieve shall not contain more than 8% of the active ingredient content per .2.1.

(Note: For example, if a product contains 5% of active ingredient, and 100 g of sample are used for the test, the dust portion must not contain more than 8% of 5 g = 0.4 g of active ingredient, and the rest of the sample not less than 4.6 g of active ingredient.)

.5 STORAGE STABILITY

.5.1 Heat Stability

After storage at 54 ± 2°C for 14 days, the product shall continue to comply with .2.2, .3.1, .4.1 and .4.2.

.6 CONTAINERS

BHC granules shall be packaged in suitable clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or lienr of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in wirting.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

CHLORDANE TECHNICAL

Provisional Specification
(FAO Specification Code 13/1/S/5:)

.1 DESCRIPTION AND IDENTITY

.1.1 Description

Technical chlordane, a viscous liquid, is a mixture of chlorinated hydrocarbons consisting of isomers of chlordane and closely related compounds in the presence of a stabilizer. Two chlordane isomers form approximately 50% of the material, and no other individual component exceeds approximately 10%.

.1.2 Identity (13/1/m/1.2, Method not in CIPAC 1)

The identity of the components, their distribution ratios, and properties of the mixture shall conform to those of an authentic Reference Technical Chlordane (Note: Obtainable from the National Physical Laboratory, Teddington, Middlesex, England.).

.2 ACTIVE INGREDIENT

.2.1 Color Spectrum (-/m/1.4, Method not in CIPAC 1)

The color spectrum produced by "Davidow" reagent will give a minimum absorbance ratio of material to standard reference sample of 0.75 : 1 and a maximum of 1.25 : 1.

.2.2 Total Organic Chlorine (CIPAC 1, 13/1/M/1.3)

Minimum: 64.0% w/w.

Maximum: 67.0% w/w.

.3 IMPURITIES

.3.1 Acidity (-/M/1.10)

Maximum: 0.3% calculated as HCl.

.3.2 Hexachlorocyclopentadiene (-/m/1.8, Method not in CIPAC 1)

Maximum: 1.0%.

.3.3 Material Insoluble in Kerosene (-/M/1.11)

Maximum: 0.3% by volume of separated, solid or liquid material.

.4 PHYSICAL PROPERTIES

.4.1 Color - Transparent (-/m/1.5, Method not in CIPAC 1)

Maximum: 11 cm on the Gardener-Hellige Scale.

.4.2 Flash Point of 80% Solution in Kerosene (-/M/1.9)

Minimum: 27.2°C.

.4.3 Viscosity (-/M/1.17)

Shall be between 75 and 135 centistokes at 54.4°C.

.4.4 Specific Gravity (-/M/1.6)

Shall be between 1.64 and 1.68 at 20°C.

.5 CONTAINERS

Chlordane technical must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for chlordane technical shall comply with DOT specification 37 A 80.

CHLORDANE EMULSIFIABLE CONCENTRATES

Provisional Specification
(FAO Specification 13/5/S/5:)

.1 DESCRIPTION AND IDENTITY

.1.1 Description

The product shall consist of an emulsifiable concentrate, based on chlordane as the only active ingredient, together with suitable solvents and any necessary formulants. It shall be free from visible and suspended matter and sediment.

It shall be formulated from chlordane complying with 13/1/S/5.

.1.2 Identity (13/5/m/1.12, Method not in CIPAC 1)

Shall comply.

.2 ACTIVE INGREDIENT

.2.1 Chlordane (CIPAC 1, 13/5/M/1.3)

The chlordane content (% w/w and/or g/l at 20°C) shall be declared and when determined, the content obtained shall not differ from that declared by more than the following amounts:

Declared Content	Permitted Tolerance
Up to 40% w/w or 400 g/l	± 5% of the declared content
Above 40% w/w or 400 g/l	± 2 percentage units or ± 20 g

.3 IMPURITIES

.3.1 Acidity or Alkalinity (-/M/1.6)

Maximum acidity: 0.05% calculated as H_2SO_4

Maximum alkalinity: 0.05% calculated as NaOH

.3.2 Water (-/M/1.5)

Maximum: 0.5%.

.4 PHYSICAL PROPERTIES

.4.1 Emulsion Stability (-/M/1.9)

After the Heat Stability Test (.5.2) the product, when diluted at 30°C (Note: Unless other temperatures are specified.) with the specified CIPAC Standard Waters, shall comply with the following:

Time After Dilution		Limits of Stability
0	Initial emulsifiability:	complete
0.5 h	Cream	: maximum: 2 ml
2 h	Cream	: maximum: 4 ml
	Free Oil	: nil
24 h	Re-emulsification	: complete
24.5 h	Cream	: maximum: 4 ml
	Free Oil	: maximum: 0.5 ml

The product shall be tested in Standard Water A and in Standard Water C (Note: Unless other CIPAC Standard Waters are specified.).

.5 STORAGE STABILITY

.5.1 Low Temperature Stability (-/M/1.8)

After storage at 0°C for 7 days the volume of solid or liquid which separates shall be not more than 0.3%.

.5.2 Heat Stability (-/M/1.10)

After storage at 54 ± 2°C for 14 days the product shall continue to comply with .2.1 (except that the minimum permitted chlordane content shall be 92.5% of that found under .2.1), .3.1, .4.1 and .5.1.

.6 CONTAINERS

Chlordane emulsifiable concentrate must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for chlordane emulsifiable concentrate shall comply with DOT specification 17 E.

CHLORDANE WETTABLE (DISPERSIBLE) POWDERS

Provisional Specification
(FAO Specification 13/3/S/5:)

.1 DESCRIPTION AND IDENTITY

.1.1 Description

The product shall consist of a homogeneous mixture containing chlordane as the only active ingredient together with fillers and any necessary formulants. It shall be a fine powder, free from visible extraneous materials and hard aggregates.

It shall be formulated from chlordane complying with 13/1/S/5.

.1.2 Identity (13/3/m/1.10, Method not in CIPAC 1)

Shall comply.

.2 ACTIVE INGREDIENT

.2.1 Organic Chlorine (CIPAC 1, 13/3/M/1.2)

The total organic chlorine content shall be declared and when determined the percentage obtained shall not differ from that declared by more than the following amounts:

Declared Content	Permitted Tolerance
Up to 40%	± 5% of the declared content
Above 40%	± 2 percentage units

.3 IMPURITIES

.3.1 Acidity or Alkalinity (-/M/1.3)

Maximum acidity: 0.2% calculated as H_2SO_4

Maximum alkalinity: 0.2% calculated as NaOH

.4 PHYSICAL PROPERTIES

.4.1 Wet Sieve Test (-/M/1.4)

Minimum: 98% through a 75 µm test sieve

.4.2 Suspensibility (-/M/1.5)

A minimum of 50% of the chlordane content (Note: This requirement shall not apply when the chlordane concentration in the diluted spray is greater than 2%. Specification requirements and methods of determination for such cases are under consideration.), declared under .2.1, shall be in suspension after 30 min. in CIPAC Standard Water A when tested on the product as received, and in CIPAC Standard Water C after the Heat Stability test.

Alternatively, if the buyer requires other CIPAC Standard Waters to be used, then this shall be specified when ordering.

.4.3 Wettability of the Product (-/M/1.6)

Shall be completely wetted in 1 min. without swirling.

.4.4 Persistent Foam (-/M/1.7)

Maximum: 25 ml after 1 min.

.5 STORAGE STABILITY

.5.1 Heat Stability (-/M/1.8)

After storage at 54 ± 2°C for 14 days the product (Note: Certain diluents need to be treated with de-activators to minimize decomposition.) shall continue to comply with .2.1 (except that the permitted minimum chlordane content shall be 92.5% of that found under .2.1), .3.1, .4.1, .4.2 and .4.3.

.6 CONTAINERS

Chlordane wettable (dispersible) powders must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate

moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for chlordane wettable (dispersible) powders shall comply with DOT specification 44 D or 37 A.

CHLORDANE GRANULES

Provisional Specification

.1 DESCRIPTION

The product shall contain chlordane as the only active ingredient, a suitable carrier and, if needed, other formulants. It shall consist of free flowing granules, free from visible extraneous matter and dust (except for the amount specified under .4.2).

It shall be formulated from chlordane complying with 13/1/S/5.

.2 ACTIVE INGREDIENT

.2.1 Organic Chlorine (CIPAC 1, 13/2/M/1.2)

The total organic chlorine content shall be declared and when determined, the percentage obtained shall not differ from that declared by more than ± 10% of the declared content.

.3 IMPURITIES

.3.1 Acidity or Alkalinity (CIPAC 1, MT 31, p. 902)

Maximum acidity: 1.0% calculated as H_2SO_4

Maximum alkalinity: 1.0% calculated as NaOH

.4 PHYSICAL PROPERTIES

.4.1 Particle Size (Dry Sieve Test)

The size range of the particles shall be declared. The ratio of the lower to the upper declared limit shall not exceed 1 : 2.

Not less than 97% of the product shall pass through a test sieve having a mesh size of the upper declared limit. Not more than 5% of the product shall pass through a test sieve having a mesh size of the lower declared limit.

.4.2 Dust

Not more than 1% of the product shall pass through a 75μ test sieve. The portion passing through this sieve shall not contain more than 8% of the active ingredient content per .2.1.

(Note: For example, if a product contains 5% of active ingredient, and 100 g of sample are used for the test, the dust portion must not contain more than 8% of 5 g = 0.4 g of active ingredient, and the rest of the sample not less than 4.6 g of active ingredient.)

.5 STORAGE STABILITY

.5.1 Heat Stability

After storage at 54 ± 2°C for 14 days, the product shall continue to comply with .2.1, .3.1, .4.1 and .4.2. (Note: Certain diluents need to be treated with de-activators to minimize decomposition.)

.6 CONTAINERS

Chlordane granules shall be packaged in suitable clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for chlordane granules shall comply with DOT specification 44 D.

HEPTACHLOR TECHNICAL

Provisional Specification
(FAO Specification 36/1/S/5:)

.1 DESCRIPTION AND IDENTITY

.1.1 Description

The material shall consist essentially of heptachlor together with related manufacturing impurities and is a tan waxy solid free from extraneous materials or added modifying agents. Approximately 75% of the material consists of heptachlor. Octachloro-4, 7-methanoidene makes up the bulk of the remainder.

.1.2 Identity (-/m/1.9, Method not in CIPAC 1)

Shall comply.

.2 ACTIVE INGREDIENTS

.2.1 Heptachlor (CIPAC 1, 36/1/M/1.2)

.2.1.1 Minimum Content

Minimum: 71%.

.2.1.2 Declared Content

The heptachlor content shall be declared and when determined, the content obtained shall not differ from that declared by more than ± 2 percentage units.

.2.2 Total Organic Chlorine (-/M/1.3)

Minimum: 64%.

.3 IMPURITIES

.3.1 Acidity (-/M/1.5)
Maximum: 0.3% calculated as H_2SO_4

.3.2 Material Insoluble in Pentane (-/m/1.10, Method not in CIPAC 1)
Maximum: 0.3%.

.3.3 Hexachlorocyclopentadiene (-/m/1.11, Method not in CIPAC 1)
Maximum: 1.0%.

.4 CONTAINERS

Heptachlor technical must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

HEPTACHLOR EMULSIFIABLE CONCENTRATES

Provisional Specification
(FAO Specification 36/5/S/5:)

.1 DESCRIPTION AND IDENTITY

.1.1 Description

The product shall consist of an emulsifiable concentrate based on heptachlor as the only active ingredient, together with suitable solvents and any necessary formulants. It shall be free from visible suspended matter and sediment.

It shall be formulated from heptachlor complying with 36/1/S/5.

.1.2 Identity (36/5/m/1.11, Method not in CIPAC 1)

Shall comply.

.2 ACTIVE INGREDIENT

.2.1 Heptachlor (CIPAC 1, 36/5/M/1.3)

The heptachlor content (% w/w and/or g/l at 20°C) shall be declared and when determined, the content obtained shall not differ from that declared by more than the following amounts:

Declared Content	Permitted Tolerance
Up to 40% w/w or 400 g/l	± 5% of the declared content
Above 40% w/w or 400 g/l	± 2 percentage units or ± 20 g/l

.3 IMPURITIES

.3.1 Acidity or Alkalinity (-/M/1.4)

Maximum acidity: 0.05% calculated as H_2SO_4

Maximum alkalinity: 0.05% calculated as NaOH

.3.2 Water (-/M/1.6)

Maximum: 0.20%.

.4 PHYSICAL PROPERTIES

.4.1 Emulsion Stability (-/M/1.8)

After the Heat Stability Test (.5.2) the product, when diluted at 30°C (Note: Unless other temperatures are specified.) with the specified CIPAC Standard Waters, shall comply with the following:

Time After Dilution	Limits of Stability
0	Initial emulsifiability, complete
0.5h	Maximum cream: 2 ml
2h	Maximum cream: 4 ml Free Oil : nil
24h	Re-emulsification, complete
24.5h	Maximum cream: 4 ml Maximum Free Oil: 0.5 ml

The product shall be tested in Standard Water A and in Standard Water C (Note: Unless other CIPAC Standard Waters are specified.).

.5 STORAGE STABILITY

.5.1 Low Temperature Stability (-/M/1.7)

After storage at 0°C for 7 days the volume of solid or liquid which separates shall be not more than 0.3%.

.5.2 Heat Stability (-/M/1.9)

After storage at 54 ± 2°C for 14 days, the product shall continue to comply with .2.1 (except that the minimum permitted heptachlor content shall be 92.5% of that found under .2.1), .3.1, .4.1 and .5.1.

.6 CONTAINERS

Heptachlor emulsifiable concentrates must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The

container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for heptachlor emulsifiable concentrates shall comply with DOT specification 17 E.

HEPTACHLOR WETTABLE (DISPERSIBLE) POWDERS

Provisional Specification
(FAO Specification 36/3/S/6:)

.1 DESCRIPTION AND IDENTITY

.1.1 Description

The product shall consist of a homogeneous mixture containing heptachlor as the only active ingredient, together with fillers and any necessary formulants. It shall be a fine powder, free from visible extraneous materials and hard aggregates.

It shall be formulated from heptachlor of quality complying with 36/1/S/5.

.1.2 Identity (36/3/m/1.10, Method not in CIPAC 1)

Shall comply.

.2 ACTIVE INGREDIENT

.2.1 Heptachlor (CIPAC 1, 36/3/M/1.2)

The heptachlor content shall be declared and when determined the percentage obtained shall not differ from that declared by more than the following amounts:

Declared Content	Tolerance Permitted
Up to 40%	± 5% of the declared content
Above 40%	± 2 percentage units

.3 IMPURITIES

.3.1 Acidity or Alkalinity (-/M/1.3)

Maximum acidity: 0.2% calculated as H_2SO_4

Maximum alkalinity: 0.2% calculated as NaOH

4 PHYSICAL PROPERTIES

4.1 Wet Sieve Test (-/M/1.4)

Minimum: 98% through a 75 µm test sieve.

4.2 Suspensibility (-/M/1.5)

A minimum of 50% of the heptachlor content, declared

under .2.1 shall be in suspension after 30 min. in CIPAC Standard Water A (Note: This requirement shall not apply when the concentration of heptachlor in the dilute spray is greater than 2%. Specification requirements and methods of determination for these cases are under consideration.) when determined on the product as received, and 45% in CIPAC Standard Water C after the Heat Stability Test.

Alternatively, if the buyer requires other CIPAC Standard Waters to be used, then this shall be specified when ordering.

.4.3 Wettability of the Product (-/M/1.6)

Shall be completely wetted in 1 min. without swirling.

.4.4 Persistent Foam (-/M/1.7)

Maximum: 25 ml of foam after 1 min.

.5 STORAGE STABILITY

.5.1 Heat Stability (-/M/1.8)

After storage at 54 ± 2°C for 14 days the product shall continue to comply with .2.1 (except that the minimum permitted heptachlor content shall be 92.5% of that found under .2.1), .3.1, .4.3 and .4.4.

.6 CONTAINERS

Heptachlor wettable (dispersible) powders must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to

prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for heptachlor wettable (dispersible) powders shall comply with DOT specification 37 A or 44 D.

HEPTACHLOR GRANULES

Provisional Specification

.1 DESCRIPTION

The product shall contain heptachlor as the only active ingredient, a suitable carrier and, if needed, other formulants. It shall consist of free flowing granules, free from visible extraneous matter and dust (except for the amount specified under .4.2).

It shall be formulated from heptachlor complying with 36/1/S/5.

.2 ACTIVE INGREDIENT

.2.1 Heptachlor (CIPAC 1, 36/2/M/1.2)

The heptachlor content shall be declared and, when determined, the percentage obtained shall not differ from that declared by more than ± 10% of the declared content.

.3 IMPURITIES

.3.1 Acidity or Alkalinity (CIPAC 1, MT 31, p. 902)

Maximum acidity: 1.0% calculated as H_2SO_4

Maximum alkalinity: 1.0% calculated as NaOH

.4 PHYSICAL PROPERTIES

.4.1 Particle Size (Dry Sieve Test)

The size range of the particles shall be declared. The ratio of the lower to the upper declared limit shall not exceed 1 : 2.

Not less than 97% of the product shall pass through a test sieve having a mesh size of the upper declared limit. Not more than 5% of the product shall pass through a test sieve having a mesh size of the lower declared limit.

.4.2 Dust

Not more than 1% of the product shall pass through a 75μ test sieve. The portion passing through this sieve shall not contain more than 8% of the active ingredient content per .2.1.

(Note: For example, if a product contains 5% of active ingredient, and 100 g of sample are used for the test, the dust portion must not contain more than 8% of 5 g = 0.4 g of active ingredient, and the rest of the sample not less than 4.6 g of active ingredient.)

.5 STORAGE STABILITY

.5.1 Heat Stability

After storage at 54 + 2°C for 14 days, the product shall continue to comply with .2.1, .3.1, .4.1 and .4.2. (Note: Certain diluents need to be treated with a deactivator to minimize decomposition.)

.6 CONTAINERS

Heptachlor granules shall be packaged in suitable clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years.

If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for heptachlor granules shall comply with DOT specification 44 D.

TOXAPHENE (CAMPHECHLOR) TECHNICAL

FAO Specification 23/1/S/5:

.1 DESCRIPTION AND IDENTITY

.1.1 Description

The material shall be chlorinated camphene containing 67 to 69% of chlorine and shall be an amber colored, opaque wax, free from extraneous impurities or added modifying agents, unless otherwise stated.

.1.2 Identity

.1.2.1 Infrared Absorptivity (CIPAC 1, 23/1/M1.1/1.5)

Maximum: 0.0177 at 7.2 µm.

.2 ACTIVE INGREDIENT

.2.1 Total Organic Chlorine (-/M1.1 or M1.2/1.2)

Minimum: 67.0%.

Maximum: 69.0%.

.3 IMPURITIES

.3.1 Acidity (-/M1.1/1.3)

Maximum: 0.1% calculated as HCl.

.4 PHYSICAL PROPERTIES

.4.1 Softening Point (-/M1.1/1.4)

Minimum: 70°C.

.4.2 Specific Gravity (-/M1.1/1.6)

Minimum: 1.600 at 100°C/15.6°C.

.5 CONTAINERS

Toxaphene technical must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for toxaphene technical are not subject to DOT regulation.

TOXAPHENE (CAMPHECHLOR) TECHNICAL SOLUTIONS

FAO Specification 23/1a/S/7:

.1 DESCRIPTION AND IDENTITY (Note: The specification refers to material either for use in the manufacture of toxaphene formulations or intended for spraying crops after dilution with oil.)

.1.1 Description

The product shall consist of a solution of toxaphene in 5° xylene. It shall be free from visible suspended matter and sediment.

It shall be formulated from toxaphene of quality complying with 23/1/S/5.

.1.2 Identity (CIPAC 1, 23/1a/M1 or M2/1.4)

.1.2.1 Infrared Absorptivity

Maximum: 0.0177 at 7.2 µm.

.2 ACTIVE INGREDIENT

.2.1 Toxaphene (-/M1 or M2/1.3)

.2.1.1 Minimum

Minimum: 86% w/w.

.2.1.2 Declared Content

The toxaphene content shall be declared as % w/w and when determined, the content obtained shall not differ from that declared by more than ± 2 percentage units.

.3 IMPURITIES

.3.1 Water

Maximum: 0.5% (-/M/1.7)

.4 PHYSICAL PROPERTIES

.4.1 Miscibility with Hydrocarbon Oil (-/M/1.8)

If the product is intended to be diluted with oil for spraying, it shall be miscible with the appropriate hydrocarbon oil.

.4.2 Viscosity (-/M/1.6)

If the product is intended to be diluted with oil for spraying, the viscosity of the product shall be declared.

.5 CONTAINERS

Toxaphene technical solutions shall be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for toxaphene technical solutions are not subject to DOT regulation.

TOXAPHENE GRANULES

Provisional Specification

.1 DESCRIPTION

The product shall contain toxaphene as the only active ingredient, a suitable carrier and if needed, other formulants. It shall consist of free flowing granules, free from visible extraneous matter and dust (except for the amount specified under .4.2).

It shall be formulated from toxaphene complying with 23/1/S/5.

.2 ACTIVE INGREDIENT

.2.1 Toxaphene (CIPAC 1, M1 or M2/1.2)

The toxaphene content shall be declared and when determined, the percentage obtained shall not differ from that declared by more than ± 8% of the declared content.

.2.2 Identity

.2.2.1 Infrared Absorptivity (CIPAC 1, 23/2/M2/1.3)

Maximum: 0.0177 at 7.2 µm.

.3 PHYSICAL PROPERTIES

.3.1 Particle Size (Dry Sieve Test)

The size range of the particles shall be declared. The ratio of the lower to the upper declared limit shall not exceed 1 : 2.

Not less than 97% of the product shall pass through a test sieve having a mesh size of the upper declared limit. Not more than 5% of the product shall pass through a test sieve having a mesh size of the lower declared limit.

.3.2 Dust

Not more than 1% of the product shall pass through a 75μ test sieve. The portion passing through this sieve shall not contain more than 8% of the active ingredient content per .2.1.

(Note: For example, if a product contains 5% of active ingredient, and 100 g of sample are used for the test, the dust portion must not contain more than 8% of 5 g = 0.4 g of active ingredient, and the rest of the sample not less than 4.6 g of active ingredient.)

.4 STORAGE STABILITY

.4.1 Heat Stability

After storage at 54 ± 2°C for 14 days, the product shall continue to comply with .2.1, .3.1 and .3.2.

.5 CONTAINERS

Toxaphene granules shall be packaged in suitable clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specification for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for toxaphene granules are not subject to DOT regulation.

ALDRIN TECHNICAL

FAO Specification Code 27/1/S/4:

Note: Aldrin is the common name for a technical material containing 95% w/w of HHDN.

HHDN is the ISO name for 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-exo-1,4-endo-5,8-dimethanonaphthalene (except Canada, Denmark and USSR, where aldrin is the common name for 100% HHDN.

.1 DESCRIPTION

The material shall consist, essentially, of HHDN together with its related manufacturing impurities. It shall be white to tan granules, flakes, or powder, free from extraneous impurities or added modifying agents.

.2 ACTIVE INGREDIENT

.2.1 HHDN (See CIPAC 1, p. 429, section 1.2)

The HHDN content (minimum: 85.5%) shall be declared and, when determined, the percentage obtained shall not differ from that declared by more than ± 4 percentage units.

.3 IMPURITIES

.3.1 Acidity (Ibid, p. 432, section 1.3)

Maximum: 0.3%, calculated as H_2SO_4.

.3.2 Material Insoluble in Heptane (Note: Method under consideration.)

Maximum: 0.8%.

.3.3 Water (See CIPAC 1, p. 432, section 1.5)

Maximum: 0.3%.

.4 CONTAINERS

Aldrin technical must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for aldrin technical shall comply with DOT specification 17 H.

ALDRIN WETTABLE (DISPERSIBLE) POWDERS

FAO Specification Code 27/3/S/4:

.1 DESCRIPTION

The product shall consist of a homogenous mixture containing HHDN as the only active ingredient, together with fillers and any necessary formulants. It shall be a fine powder, free from visible extraneous materials and hard aggregates.

It shall be formulated from HHDN complying with the specification for "HHDN Technical".

.2 ACTIVE INGREDIENT

.2.1 HHDN (See CIPAC 1, p. 436, section 1.2)

The HHDN content shall be declared and, when determined, the percentage obtained shall not differ from that declared by more than the following amounts:

Declared Content	Permitted Tolerance
Up to 50%	± 8% of the declared content
Above 50%	± 4 percentage units

.3 IMPURITIES

.3.1 Acidity or Alkalinity (Ibid, p. 436, section 1.3)

Maximum acidity: 0.5%, calculated as H_2SO_4.

Maximum alkalinity: 0.5%, calculated as NaOH.

.4 PHYSICAL PROPERTIES

.4.1 Wet Sieve Test (Ibid, p. 436, section 1.4)

Minimum: Not less than 98% of the product shall pass through a 75 µm test sieve.

.4.2 Suspensibility (Ibid, p. 436, section 1.5)

A minimum of 50% of the HHDN content, declared under .2.1, shall be in suspension after 30 min. in CIPAC Standard Water A (Note: This requirement shall not apply when the concentration of HHDN in the dilute spray is greater than 2%. Specification requirements and methods of determination for those cases are under consideration.),when determined on the product as received, and in CIPAC Standard Water D, after the Heat Stability test.

Alternatively, if the buyer requires other CIPAC Standard Waters to be used, he should specify accordingly, when ordering.

.4.3 Wettability of the Product (Ibid, p. 438, section 1.6)

It shall be completely wetted in 1 min.

.4.4 Persistent Foam (Ibid, p. 438, section 1.7)

Maximum: 40 ml of foam after 1 min.

.5 STORAGE STABILITY

.5.1 Heat Stability

.5.1.1 At 90°C (Note: Method not included in CIPAC 1.)

After storage at 90 ± 2°C for 48 h. (Note: Certain diluents need to be treated with de-activators to minimize decomposition of the product.) the product shall continue to comply with .2.1 (except that the minimum permitted HHDN content shall be not less than 90% of that found in .2.1).

.5.1.2 At 54°C (See CIPAC 1, p. 438, section 1.8)

After storage at 54 ± 2°C for 14 days (Note: Certain diluents need to be treated with de-activators to minimize decomposition of the product.) the product shall continue to comply with .3.1 (except that the maximum permitted acidity or alkalinity shall be 0.55%) and with .4.1, .4.2 and .4.3.

.6 CONTAINERS

Aldrin wettable (dispersible) powders must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for aldrin wettable (dispersible) powders shall comply with DOT regulations, 49 CFR 173.365 (applicable to dry formulations containing more than 65% of aldrin active ingredient).

ALDRIN EMULSIFIABLE CONCENTRATES

FAO Specification Code 27/5/S/5:

.1 DESCRIPTION

The product shall consist of an emulsifiable concentrate based on HHDN as the only active ingredient, together with suitable solvents and any necessary formulants. It shall be free from visible suspended matter and sediment.

It shall be formulated from HHDN complying with the specification for "HHDN Technical"

.2 ACTIVE INGREDIENT

.2.1 HHDN (See CIPAC 1, p. 439, section 1.3)

The HHDN content (% w/w and/or g/l at 20°C) shall be declared and, when determined, the content obtained shall not differ from that declared by more than ± 8% of the declared content.

.3. IMPURITIES

.3.1 Acidity or Alkalinity (Ibid, p. 441, section 1.4)

Maximum acidity: 0.05%, calculated as H_2SO_4.

Maximum alkalinity: 0.05%, calculated as NaOH.

.3.2 Water (Ibid, p. 441, section 1.6)

Maximum: 0.20% (Note: Higher water content may cause corrosion of the containers).

.4 PHYSICAL PROPERTIES

.4.1 Emulsion Stability (Ibid, p. 441, section 1.8)

After the Heat Stability test (.5.2), the product, when diluted at 30°C (Note: Unless other temperatures are specified), with the specified CIPAC Standard Waters, shall comply with the following:

Time After Dilution	Limits of Stability
0	Initial Emulsifiability: complete
0.5h	Cream: maximum 2 ml
2.0h	(Cream: maximum 4 ml (Free oil: nil
24.0h	Re-emulsification: complete
24.5h	(Cream: maximum 4 ml (Free oil: maximum 0.5 ml

The product shall be tested in Standard Water A and in Standard Water D (Note: Unless other CIPAC Standard Waters are specified), after the Heat Stability test.

.5 STORAGE STABILITY

.5.1 Low Temperature Stability (Ibid, p. 441, section 1.7)

After storage at 0°C for 7 days, the volume of solid or liquid which separates shall be not more than 0.3%.

.5.2 Heat Stability (Ibid, p. 442, section 1.9)

After storage at 54 ± 2°C for 14 days, the concentrate shall continue to comply with .2.1, .3.1 (except that the maximum permitted acidity shall be 0.055%), and with .4.1 and .5.1.

.6 CONTAINERS

Aldrin emulsifiable concentrates must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for aldrin emulsifiable concentrates shall comply with DOT specification 17 E.

ALDRIN GRANULES

Provisional Specification

.1 DESCRIPTION

The product shall contain aldrin as the only active ingredient, a suitable carrier and if needed, other formulants. It shall consist of free flowing granules, free from visible extraneous matter and dust (except for the amount specified under .4.2).

It shall be formulated from aldrin complying with 27/1/S/4.

.2 ACTIVE INGREDIENT

.2.1 HHDN (See CIPAC 1, p. 432, section 1.2)

The HHDN content shall be declared and when determined, the percentage obtained shall not differ from that declared by more than ± 8% of the declared content.

.2.2 Identity (Method not in CIPAC 1, IR Method available from manufacturer.)

Shall comply.

.3 IMPURITIES

.3.1 Acidity or Alkalinity (CIPAC 1, MT 31, p. 902)

Maximum acidity: 1.0% calculated as H_2SO_4

Maximum alkalinity: 1.0% calculated as NaOH

.4 PHYSICAL PROPERTIES

.4.1 Particle Size (Dry Sieve Test)

The size range of the particles shall be declared. The ratio of the lower to the upper declared limit shall not exceed 1 : 2.

Not less than 97% of the product shall pass through a test sieve having a mesh size of the upper declared limit. Not more than 5% of the product shall pass through a test sieve having a mesh size of the lower declared limit.

.4.2 Dust

Not more than 1% of the product shall pass through a 75μ test sieve. The portion passing through this sieve shall not contain more than 8% of the active ingredient content per .2.1.

(Note: for example, if a product contains 5% of active ingredient, and 100 g of sample are used for the test, the dust portion must not contain more than 8% of 5 g = 0.4 g of active ingredient, and the rest of the sample not less than 4.6 g of active ingredient.)

.5 STORAGE STABILITY

.5.1 Heat Stability

After storage at 54 ± 2°C for 14 days, the product shall continue to comply with .2.1, .3.1, .4.1 and .4.2 (Note: Certain diluents need to be treated with deactivators to minimize decomposition of the product.).

.6 CONTAINERS

Aldrin granules shall be packaged in suitable clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyehtylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration

or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for aldrin granules are not subject to DOT regulation.

DIELDRIN TECHNICAL

FAO Specification Code 16/1/S/4

Note: Dieldrin is the ISO name for a technical material containing 85% w/w of HEOD.

HEOD is the ISO name for 1, 2, 3, 4, 10, 10-hexachloro-6, 7-epoxy-1, 4, 4a, 5, 6, 7, 8, 8a-octahydro-exo-1, 4-endo-5, 8-dimethano-napthalene (except in Canada, Denmark, and USSR, where dieldrin is the common name for 100% HEOD).

.1 DESCRIPTION

The material shall consist, essentially, of HEOD together with its related manufacturing impurities. It shall be white to tan granules, flakes, or powder, free from extraneous impurities or added modifying agents.

.2 ACTIVE INGREDIENT

.2.1 HEOD (See CIPAC 1, p. 406, section 1.2)

The HEOD content (minimum 80% w/w) shall be declared and, when determined, the percentage obtained shall not differ from that declared by more than ± 4 percentage units.

.3 IMPURITIES

.3.1 Acidity (Ibid, p. 409, section 1.3)

Maximum: 0.3% w/w, calculated as H_2SO_4.

.3.2 Material Insoluble in Xylene (Ibid, p. 409, section 1.4)

Maximum: 0.5% w/w

.3.3 Water (Ibid, p. 409, section 1.5)

Maximum: 0.3% w/w

CONTAINERS

Dieldrin technical must be packaged in suitable, clean containers which do not affect, and are not

affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for dieldrin technical shall comply with DOT specification 17 H.

DIELDRIN WETTABLE (DISPERSIBLE) POWDERS

FAO Specification Code 16/3/S/4

.1 DESCRIPTION

The product shall consist of a homogeneous mixture containing HEOD as the only active ingredient, together with fillers and any necessary formulants. It shall be a fine powder, free from visible extraneous materials and hard aggregates.

It shall be formulated from HEOD complying with the specification for "HEOD Technical".

.2 ACTIVE INGREDIENT

.2.1 HEOD (See CIPAC I, p. 413, section 1.2)

The HEOD content shall be declared and, when determined, the percentage obtained shall not differ from that declared by more than the following amounts:

Declared Content	Permitted Tolerance
Up to 50%	± 8% of the declared content
Above 50%	± 4 percentage units

.3 IMPURITIES

.3.1 Acidity or Alkalinity (Ibid, p. 413, section 1.3)

Maximum acidity: 0.5%, calculated as H_2SO_4.

Maximum alkalinity: 0.5%, calculated as NaOH.

.4 PHYSICAL PROPERTIES

.4.1 Wet Sieve Test (Ibid, p. 413, section 1.4)

Minimum: Not less than 98% of the product shall pass through a 75 µm test sieve.

.4.2 Suspensibility (Ibid, p. 413, section 1.5)

A minimum of 50% of the HEOD content, declared

under .2.1, shall be in suspension after 30 min in CIPAC Standard Water A (Note: This requirement shall not apply when the concentration of HEOD in the dilute spray is greater than 2%. Specification requirements and methods of determination for those cases are under consideration.), when determined on the product as received, and in CIPAC Standard Water D, after the Heat Stability test.

Alternatively, if the buyer requires other CIPAC Standard Waters to be used, he should specify accordingly, when ordering.

.4.3 Wettability of the Product (Ibid, p. 415, section 1.6)

It shall be completely wetted in 1 min.

.4.4 Persistent Foaming (Ibid, p. 415, section 1.7)

Maximum 40 ml of foam after 1 min.

.5 STORAGE STABILITY

.5.1 Heat Stability

.5.1.1 At 90°C (Ibid, p. 415, section 1.8)

After storage at 90 + 2°C for 48 h (Note: Certain diluents need to be treated with de-activators to minimize decomposition.), the product shall continue to comply with .2.1 (except that the minimum permitted HEOD content shall be not less than 90% of that found under .2.1)

.5.1.2 At 54°C (Note: Method not included in CIPAC Handbook I.)

After storage at 54 + 2°C for 14 days (Note: Certain diluents need to be treated with de-activators to minimize decomposition.), the product shall continue to comply with .3.1 (except that the maximum permitted acidity shall be 0.55%) and with .4.1, .4.2 and .4.3

.6 CONTAINERS

Dieldrin wettable (dispersible) powders shall be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for dieldrin wettable (dispersible) powders shall comply with DOT regulations, 49 CFR 173.365.

DIELDRIN EMULSIFIABLE CONCENTRATES

FAO Specification Code 16/5/S/4:

.1 DESCRIPTION

The product shall consist of an emulsifiable concentrate based on HEOD as the only active ingredient, together with suitable solvents and any necessary formulants. It shall be free from visible suspended matter and sediment.

It shall be formulated from dieldrin complying with the specification for dieldrin technical, Code 16/1/S/4.

.2 ACTIVE INGREDIENT

.2.1 HEOD (See CIPAC I, p. 416, section 1.3)

The HEOD content (% w/w and/or g/l at 20°C) shall be declared and, when determined, the content obtained shall not differ from that declared by more than ± 8% of the declared content.

.3 IMPURITIES

.3.1 Acidity or Alkalinity (Ibid, p. 419, section 1.4)

Maximum acidity: 0.05%, calculated as H_2SO_4.

Maximum alkalinity: 0.05%, calculated as NaOH.

.3.2 Water (Ibid, p. 419, section 1.6)

Maximum: 0.20% (Note: Higher water content may cause corrosion of the containers.)

.4 PHYSICAL PROPERTIES

.4.1 Emulsion Stability (Ibid, p. 419, section 1.8)

After the Heat Stability test (.5.2), the product, when diluted at 30°C (Note: Unless other temperatures are specified.) with the specified CIPAC Standard Waters, shall comply with the following:

Initial emulsifiability	:	complete
'Cream' after 30 min	:	maximum: 2 ml
'Cream' after 2 h	:	maximum: 4 ml
'Free Oil' after 2 h	:	nil
Re-emulsification after 24 h	:	complete
'Cream' 30 min later	:	maximum: 4 ml
'Free Oil' 30 min later	:	maximum: 0.5 ml

The product shall be tested in Standard Water A and in Standard Water D (Note: Unless other CIPAC Standard Waters are specified.) after the Heat Stability test.

.5 STORAGE STABILITY

.5.1 Low Temperature Stability (Ibid, p. 419, section 1.7)

After storage at 0°C for 7 days, the volume of solid or liquid which separates shall be not more than 0.3%.

.5.2 Heat Stability (Ibid, p. 419, section 1.9)

After storage at 54 ± 2°C for 14 days, the concentrate shall continue to comply with .2.1, .3.1 (except that the maximum permitted acidity shall be 0.055%) and with .4.1 and .5.1.

.6 CONTAINERS

Dieldrin emulsifiable concentrates shall be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for dieldrin emulsifiable concentrates shall comply with DOT specification 17 C.

DIELDRIN GRANULES

Provisional Specification

.1 DESCRIPTION

The product shall contain dieldrin as the only active ingredient, a suitable carrier and if needed, other formulants. It shall consist of free flowing granules, free from visible extraneous matter and dust (except for the amount specified under .4.2).

It shall be formulated from dieldrin complying with 16/1/S/4.

.2 ACTIVE INGREDIENT

.2.1 HEOD (See CIPAC 1, p. 409, section 1.2)

The HEOD content shall be declared and when determined, the percentage obtained shall not differ from that declared by more than ± 8% of the declared content.

2.2 Identity (Method not in CIPAC 1, IR Method available from manufacturer.)

Shall comply.

.3 IMPURITIES

.3.1 Acidity or Alkalinity (CIPAC 1, MT 31, p. 902)

Maximum acidity: 1.0% calculated as H_2SO_4

Maximum alkalinity: 1.0% calculated as NaOH

.4 PHYSICAL PROPERTIES

.4.1 Particle Size (Dry Sieve Test)

The size range of the particles shall be declared. The ratio of the lower to the upper declared limit shall not exceed 1 : 2.

Not less than 97% of the product shall pass through a test sieve having a mesh size of the upper declared limit. Not more than 5% of the product shall pass through a test sieve having a mesh size of the lower declared limit.

.4.2 Dust

Not more than 1% of the product shall pass through a 75μ test sieve. The portion passing through this sieve shall not contain more than 8% of the active ingredient content per .2.1.

(Note: For example, if a product contains 5% of active ingredient, and 100 g of sample are used for the test, the dust portion must not contain more than 8% of 5 g = 0.4 g of active ingredient, and the rest of the sample not less than 4.6 g of active ingredient.)

.5 STORAGE STABILITY

.5.1 Heat Stability

After storage at 54 ± 2°C for 14 days, the product shall continue to comply with .2.1, .3.1, .4.1 and .4.2 (Note: Certain diluents need to be treated with deactivators to minimize decomposition.).

.6 CONTAINERS

Dieldrin granules shall be packaged in suitable clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the

container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for dieldrin granules shall comply with DOT regulations, 49 CFR 173.365.

ENDRIN TECHNICAL

Provisional Specification
(FAO Specification 28/1/S/5:)

.1 DESCRIPTION AND IDENTITY

.1.1 Description

The material shall consist essentially of endrin together with related manufacturing impurities in the form of white to tan granules, flakes or powder, free from extraneous impurities or added modifying agents.

.1.2 Identity (28/1/m/1.6, Method not in CIPAC 1)

Shall comply.

.2 ACTIVE INGREDIENT

.2.1 Endrin Content (CIPAC 1, 28/1/(M)/1.2)

.2.1.1 Minimum

Minimum: 92% w/w.

.2.1.2 Declared Content

The endrin content (% w/w) shall be declared and when determined, the content obtained shall not differ from that declared by more than ± 4 percentage units.

.3 IMPURITIES

.3.1 Acidity (-/M/1.3)

Maximum: 0.4% calculated as H_2SO_4

.3.2 Material Insoluble in Xylene (-/M/1.4)

Maximum: 0.5% w/w.

.3.3 Water (-/M/1.5)

Maximum: 0.75% w/w.

.4 CONTAINERS

Endrin technical must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for endrin technical shall comply with DOT specification 37 A and 21 C - 115.

ENDRIN EMULSIFIABLE CONCENTRATES

Provisional Specification
(FAO Specification 28/5/S/5:)

.1 DESCRIPTION AND IDENTITY

.1.1 Description

The product shall consist of emulsifiable concentrates based on endrin as the only active ingredient, together with suitable solvents and any necessary formulants. It shall be free from visible suspended matter and sediment.

It shall be formulated from endrin technical of quality complying with 28/1/S/5.

.1.2 Identity (28/5/m/1.11, Method not in CIPAC 1)

Shall comply.

.2 ACTIVE INGREDIENT

.2.1 Endrin (CIPAC I, 28/5/(M)/1.3)

The endrin content (% w/w and/or g/l at 20°C) shall be declared and when determined the content obtained shall not differ from that declared by more than ± 8% of the declared content.

.3 IMPURITIES

.3.1 Acidity or Alkalinity (-/M/1.4)

Maximum acidity: 0.05% calculated as H_2SO_4

Maximum alkalinity: 0.05% calculated as NaOH

.3.2 Water (-/M/1.6)

Maximum: 0.2% (Note: Higher water content may cause corrosion of the containers.)

4 PHYSICAL PROPERTIES

4.1 Emulsion Stability (-/M/1.8)

After the Heat Stability test (.5.2) the product, when diluted at 30°C (Note: Unless other temperatures are specified.) with the specified CIPAC

Standard Waters, shall comply with the following:

Time After Dilution	Limits of Stability
0	Initial Emulsifiability, complete
0.5 h	Cream, maximum 2 ml
2 h	Cream, maximum 4 ml Free Oil, nil
24 h	Re-emulsification, complete
24.5 h	Cream, maximum 4 ml Free Oil, maximum 0.5 ml

The product shall be tested in Standard Water A and in Standard Water C (Note: Unless other CIPAC Standard Waters are specified.).

.5 STORAGE STABILITY

.5.1 Low Temperature Stability (-/M/1.7)

After storage at 0°C for 7 days the volume of solid or liquid which separates shall not be more than 0.3%.

.5.2 Heat Stability (-/M/1.9)

After storage at 54 ± 2°C for 14 days the product shall continue to comply with .2.1, .3.1 (except that the maximum permitted acidity shall be 0.55%) .3.2, .4.1 and .5.1.

.6 CONTAINERS

Endrin emulsifiable concentrates must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences including moisture, contamination and compaction, and from loss by vaporization. Where necessary, containers shall be lined with a suitable

material to prevent corrosion or deterioration of contents or container. Outer surfaces of containers must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for endrin emulsifiable concentrates shall comply with DOT specification 17 E.

ENDRIN GRANULES

Provisional Specification
(FAO Draft Specification 28/12/s/2:)

.1 DESCRIPTION AND IDENTITY

.1.1 Description

The product shall contain endrin as the only active ingredient, together with carriers (Note: Certain carriers need to be treated with deactivators to minimize decomposition of the product.) and any necessary formulants. It shall be a dry, free flowing, non-flammable granular preparation, essentially non-dusty, suitable for surface treatment of soil in a dry broadcasting operation.

It shall be formulated from endrin technical of quality complying with 28/1/S/5.

.1.2 Identity (28/12/M/3.3, Method not in CIPAC 1)

Shall comply.

.2 ACTIVE INGREDIENT

.2.1 Endrin (-/M/3.2)

The endrin content shall be declared and when determined the content obtained shall not differ from that declared by more than ± 8% of the declared content.

.3 IMPURITIES

.3.1 Acidity or Alkalinity (-/M/3.7; MT 31)

Maximum acidity: 1% calculated as H_2SO_4

Maximum alkalinity: 1% calculated as NaOH

.4 PHYSICAL PROPERTIES

.4.1 Apparent Density without Compaction (-/M/3.4)

The apparent density without compaction of the product shall be declared and shall be not less than 0.4 g/ml.

.4.2 Dry Sieve Test (-/M/3.5)

The size range of the particles shall be declared. The ratio of the lower to the upper declared limit shall not exceed 1 : 2.

Not less than 97% of the product shall pass through a test sieve having a mesh size of the upper declared limit. Not more than 5% of the product shall pass through a test sieve having a mesh size of the lower declared limit.

Maximum: 4% through a 250 µm test sieve.

Maximum: 1% through a 150 µm test sieve.

The material passing the 150 µm test sieve shall not contain more than 8% of the active ingredient declared under .2.1. (Note: If the dust contains a declared content of 5% endrin and 100 g of sample is used in the test, then the amount of endrin in the residue on the sieve should not exceed 8% of 5 g = 0.4 g.)

.5 STORAGE STABILITY

.5.1 Heat Stability (-/M/3.6)

After storage at 54 ± 2°C for 14 days the product shall continue to comply with .2.1, .3.1, .4.1 and .4.2.

.6 CONTAINERS

Endrin granules shall be packaged in suitable clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction,

and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for endrin granules shall comply with DOT specification 44 D, and with 49 CFR 173.365.

CAPTAN TECHNICAL

Provisional Specification
(FAO Specification Code 40/1/S/4:)

.1 DESCRIPTION AND IDENTITY

.1.1 Description

The material shall consist, essentially, of technical captan which is a white powder free from extraneous materials and added modifying agents.

.2 Identity (40/1/M1/1.6, method not in CIPAC 1)

Shall comply.

.2 ACTIVE INGREDIENT

.2.1 Captan (CIPAC 1, 40/1/M1.1/1.2, Referee Method; 40/M1.2/1.2; or 40/1/M2/1.2)

.2.1.1 Minimum Content

Minimum: 90%

.2.1.2 Declared Content

The captan content shall be declared, and when determined, the percentage obtained shall not differ from that declared by more than ± 2 percentage units.

.3 IMPURITIES

.3.1 Perchloromethylmercaptan (-/m/1.5, method not in CIPAC 1)

Maximum: 0.1%

.3.2 pH of 1% Aqueous Disperson (-/M/1.3)

Minimum: 7.0

.3.3 Loss on Drying (-/M/1.4)

Maximum: 2%

4 CONTAINERS

Note: The containers should include in their labels, "Keep in a cool, dry place".

Captan Technical must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporiation. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for captan technical shall comply with DOT specification 21 C.

CAPTAN WETTABLE (DISPERSIBLE) POWDERS

Provisional Specification
(FAO Specification Code 40/3/S/4:)

.1 DESCRIPTION AND IDENTITY

.1.1 Description

The product shall consist of a homogeneous mixture containing captan as the only active ingredient, together with fillers and any necessary formulants. It shall be a fine powder, free from visible extraneous materials and hard aggregates, and white to cream, unless otherwise agreed.

It shall be formulated from captan complying with 40/1/S/4.

.1.2 Identity (40/3/m/1.12, method not in CIPAC 1)

Shall comply.

.2 ACTIVE INGREDIENT

.2.1 Captan (CIPAC 1, 40/3/M1.1/1.3, Referee Method; or 40/1/M1.2/1.3; or 40/3/M2/1.3)

The captan content shall be declared and when determined, the percentage obtained shall not differ from that declared by more than the following amounts:

Declared Content	Permitted Tolerance
Up to 40%	± 5% of the declared content
Above 40%	± 2 percentage units

.3 IMPURITIES

.3.1 Perchloromethylmercaptans (-/m/3.11, method not in CIPAC 1)

Maximum: 0.1 %

.4 PHYSICAL PROPERTIES

.4.1 Wet Sieve Test (-/M/1.4)

Minimum: 98% through a 75 µm test sieve.

.4.2 pH of 1% Aqueous Dispersion (-/M/1.8)

Minimum: 6.5

.4.3 Suspensibility (-/M/1.5)

Not less than 60% of the captan declared under .2.1 shall be in suspension after 30 min in CIPAC Standard Water A, when determined on the product as received, and in CIPAC Standard Water C after the Heat Stability test.

Alternatively, if the buyer requires other CIPAC Standard Waters to be used, then this shall be specified when ordering.

.4.4 Wettability of the Product (-/M/1.6)

Shall be completely wetted in 1 min. without swirling.

.4.5 Persistent Foam (-/M/1.7)

Maximum: 25 ml of foam after 1 min.

.5 STORAGE STABILITY

.5.1 Heat Stability (-/M/1.9)

After storage at 54 + 2°C for 14 days the product shall continue to comply with .2.1, .4.1, .4.2, .4.3 and .4.4 (Note: All labels shall state prominently "Store in a cool, dry place".).

.6 CONTAINERS

Captan wettable (dispersible) powders must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect

the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for captan wettable (dispersible) powders shall comply with DOT specification 21 C.

BENOMYL TECHNICAL

Provisional Specification

.1 DESCRIPTION

The material shall consist essentially of benomyl which is a white solid, free from extraneous impurities or added modifying agents.

.2 ACTIVE INGREDIENT

.2.1 Benomyl (Method not in CIPAC or AOAC Handbooks; IR Method recommended.)

The benomyl content (minimum: 95%) shall be declared and when determined, the content obtained shall not differ from that declared by more than ± 2 percentage units.

.3 IMPURITIES

No data, to be completed later.

NOTE:

Benomyl technical is not commercially available as such. The purpose of this specification is to define the quality of benomyl technical to be used in formulations.

BENOMYL WETTABLE (DISPERSIBLE) POWDERS

rovisional Specification

1 DESCRIPTION

1.1 Description

The product shall consist of a homogeneous mixture containing benomyl as the only active ingredient, together with fillers and any necessary formulants. It shall be a fine powder, free from visible extraneous materials and hard aggregates, and white to cream in color, unless otherwise agreed.

It shall be formulated from benomyl complying with the specifications for "Benomyl Technical".

.2 ACTIVE INGREDIENT

.2.1 Benomyl (Method not in CIPAC or AOAC Handbooks; IR Method recommended.)

The benomyl content shall be declared and when determined, the percentage obtained shall not differ from that declared by more than the following amounts:

Declared Content	Permitted Tolerance
Up to 40%	± 5% of the declared content
Abcve 40%	± 2 percentage units

.3 IMPURITIES

No data; to be completed later.

.4 PHYSICAL PROPERTIES

.4.1 Wet Sieve Test (CIPAC 1, MT 59.3, p. 981)

Minimum: 98% through a 75 µm test sieve.

.4.2 Suspensibility

A minimum of 50% of the benomyl content declared under .2.1 shall be in suspension after 30 min. in CIPAC Standard Water A (Note: This requirement does not apply when the benomyl concentration in the dilute spray is greater than 2%. Specification requirements and methods of determination for these cases are under consideration.) when determined on the product as received, and in CIPAC Standard Water C after the Heat Stability Test.

Alternatively, if the buyer requires other CIPAC Standard Waters to be used, then this shall be specified when ordering.

.4.3 Wettability of the Product (CIPAC 1, MT 53.3, p.966)

Shall be completely wetted in 1 min., without swirling.

.4.4 Persistent Foam (CIPAC 1, MT 47, p. 954)

Maximum: 25 ml of foam after 1 min.

.5 STORAGE STABILITY

.5.1 Heat Stability (CIPAC 1, MT 46, p. 951)

After storage at 54 ± 2°C for 14 days the product shall continue to comply with .2.1, .4.1, and .4.3.

.6 CONTAINERS

Benomyl wettable (dispersible) powders must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner

bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for benomyl wettable (dispersible) powders shall comply with DOT specification 21 C.

ZINEB TECHNICAL

Provisional Specification
(FAO Specification 25/1/S/4:)

.1 DESCRIPTION AND IDENTITY

.1.1 Description

The specification refers to the technical grade of zineb which is a white to cream powder.

.1.2 Identity (25/1/m/1.3, Method not in CIPAC 1)

Shall comply.

.2 ACTIVE INGREDIENT

.2.1 Zineb (CIPAC 1, 25/1/M/1.2)

.2.1.1 Minimum Content

Minimum: 85% w/w.

.2.1.2 Declared Content

The zineb content shall be declared and when determined the content obtained shall not be lower than that declared by more than 2 percentage units.

.2.2 Zinc (-/M/1.4)

Minimum: 23.3%)
) of the zineb found under .2.1 (Note:
Maximum: 25.0%) On a result of 95% zineb the permitted minimum zinc content would be 22.5% and the maximum 23.75%.).

.3 IMPURITIES

.3.1 Arsenic (-/M/1.5)

Maximum: 250 µg/g (Note: The manufacturer shall guarantee that the arsenic content is 250 µg/g or less.)

.3.2 Water (-/M/1.6)

Minimum: 1.0%.

ZINEB WETTABLE (DISPERSIBLE) POWDERS

Provisional Specification
(FAO Specification 25/3/S/4:)

.1 DESCRIPTION AND IDENTITY

.1.1 Description

The product shall consist of a homogeneous mixture containing zineb as the only active ingredient together with fillers and any necessary formulants. It shall be a fine powder free from visible extraneous materials and hard aggregates.

It shall be formulated from zineb technical of quality complying with 25/1/S/4.

.1.2 Identity (25/3/M/1.3, Method not in CIPAC 1)

Shall comply.

.2 ACTIVE INGREDIENT

.2.1 Zineb (CIPAC 1, 25/3/M/1.2)

The zineb content shall be declared and when determined, the content obtained shall not be lower than that declared by more than 2 percentage units.

.2.2 Zinc (-/M/1.4)

Minimum: 23.3%)
) of the zineb content found under .2.1.
Maximum: 25.0%)

(Note: On a result of 80% zineb the zinc content must not be less than 18.96% nor greater than 20.0%.)

.3 IMPURITIES

.3.1 Arsenic (-/M/1.5)

Maximum: $2.5\underline{x}$ µg/g where $\underline{x}$ is the percentage zineb declared under .2.1 (Note: On a declared content of 70% the maximum permitted arsenic content would be

2.5 x 70 or 175 µg/g. The manufacturer shall guarantee that the product complies with this clause.).

.3.2 Water (-/M/1.6)

Maximum: 2.0%.

.4 PHYSICAL PROPERTIES

.4.1 Wet Sieve Test (-/M/1.7)

Not less than 99.8% of the product shall pass through a 150 µm test sieve and not less than 98% through a 75 µm test sieve.

.4.2 Suspensibility (-/M/1.9)
(Note: This requirement shall not apply when the concentration of the zineb in the dilute spray is greater than 1%. Specification requirements and methods of determination for such cases are under consideration.)

A minimum of 70% of the zineb content declared under .2.1 shall be in suspension after 30 min. in CIPAC Standard Water A on the sample as received and not less than 60% in CIPAC Standard Water C after the Heat Stability Test.

Alternatively, if the buyer requires other CIPAC Standard Waters to be used then this shall be specified when ordering.

.4.3 pH of 1% Aqueous Dispersion (-/M/1.8)

Shall be between 5.0 and 9.0.

.4.4 Wettability of the Product (-/M/1.10)

Shall be completely wetted in 1 min. without swirling.

.4.5 Persistent Foam (-/M/1.11)

Maximum: 25 ml after 1 min.

.5 STORAGE STABILITY

.5.1 Heat Stability (-/M/1.12)

After storage at 54 ± 2°C for 14 days the product shall continue to comply with .2.1, .4.1, .4.2, .4.3 and .4.4.

.6 CONTAINERS

Zineb wettable (dispersible) powders must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling fo emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for zineb wettable (dispersible) powders are not subject to DOT regulation.

MANEB ANHYDROUS TECHNICAL

Provisional Specification
(FAO Specification 61/1/S/4:)

.1 DESCRIPTION AND IDENTITY

.1.1 Description

The specification refers to a technical grade of maneb which is a yellow to buff powder.

.1.2 Identity (61/1/m/1.3, Method not in CIPAC 1)

Shall comply.

.2 ACTIVE INGREDIENT

.2.1 Maneb (CIPAC 1, 61/1/M/1.2)

.2.1.1 Minimum Content

Minimum: 85% w/w.

.2.1.2 Declared Content

The maneb content shall be declared and when determined the content obtained shall not be below that declared by more than -2 percentage units.

.2.2 Manganese (-/M/1.4, Method not in CIPAC 1)

Minimum: 20.7%)
) of the maneb found under .2.1.
Maximum: 22.5%)

(Note: On a result of 90% maneb the permitted manganese content would be 18.9%.)

.3 IMPURITIES

.3.1 Free Water (-/M/1.5)

Maximum: 1.0%.

.3.2 Zinc (-/M/1.7)

Maximum: 1% of maneb found under .2.1 (Note: On a result of 90% maneb the permitted maximum content would be 0.90%.)

.4 PHYSICAL PROPERTY

.4.1 Ignition Point (Information only) (-/M/1.6, Method not In CIPAC 1)

Minimum ignition temperature: 135°C and the time between initial heating and ignition shall be not less than 10 min.

MANEB WETTABLE (DISPERSIBLE) POWDERS
(Based on Anhydrous Maneb)

Provisional Specification
(FAO Specification 61/3/S/4:)

.1 DESCRIPTION AND IDENTITY

.1.1 Description

The product shall consist of a homogeneous mixture containing anhydrous maneb as the only active ingredient together with suitable fillers and any necessary formulants. It shall be a fine powder free from visible extraneous materials and hard aggregates.

It shall be formulated from maneb technical of quality complying with 61/1/S/4.

.1.2 Identity (61/3/m/1.3, Method not in CIPAC 1)

Shall comply.

.2 ACTIVE INGREDIENT

.2.1 Maneb (CIPAC 1, 61/3/M/1.2)
(Note: The maneb content deteriorates at the rate of between 0.3 to 1.0% per month, e.g., a product containing 80% maneb when manufactured may assay 70.0% at the end of 12 months. In very bad storage conditions or where unsuitable containers have been used the deterioration is accelerated. The manganese content will not be affected.)

The maneb content shall be declared and when determined, the content obtained shall not be lower than that declared by more than 3 percentage units.

.2.2 Manganese (-/M/1.3, Method not in CIPAC 1)

Minimum: 20.7%)
) of the maneb found under .2.1
Maximum: 22.5%)

(Note: On a result of 80% maneb the minimum permitted manganese content would be 16.8%.)

.3 IMPURITIES

.3.1 Free Water (-/M/1.5)

Maximum: 2%.

.3.2 Zinc (-/M/1.14, Method not in CIPAC 1)

Maximum: 1% of the maneb found under .2.1. (Note: On a result of 80% maneb the maximum permitted zinc content would be 0.80%.)

.4 PHYSICAL PROPERTIES

.4.1 Wet Sieve Test (-/M/1.6)

Minimum: 99.8% through a 150 µm test sieve.

.4.2 Suspensibility (-/M/1.18)
(Note: This requirement shall not apply when the concentration of the maneb in the dilute spray is greater than 1%. Specification requirements and methods of determination for such cases are under consideration.)

A minimum of 60% of the maneb content declared under .2.1 shall be in suspension after 30 min. in CIPAC Standard Water A when determined on the sample as received, and not less than 50% in CIPAC Standard Water C after the Heat Stability Test.

.4.3 pH of Aqueous Dispersion (-/M/1.9)

Shall be between 5.0 and 9.0.

.4.4 Ignition Point (Information only)
(-/m/1.7, Method not in CIPAC 1)

Minimum ignition temperature: 135°C and the time between initial heating and combustion shall be not less than 10 min.

.4.5 Wettability of the Powder (-/M/1.10)

Shall be completely wetted in 1 min. without swirling

.4.6 Persistent Foaming (-/M/1.1)

Maximum: 25 ml after 1 min.

.5 STORAGE STABILITY

.5.1 Heat Stability (-/M/1.12)

After storage at 54 ± 2°C for 14 days the product shall continue to comply with .2.1, .4.1, .4.2, .4.3, .4.4 and .4.5.

.6 CONTAINERS

Maneb wettable (dispersible) powders must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for maneb wettable (dispersible) powders are not subject to DOT regulation.

MANCOZEB TECHNICAL

Provisional Specification

.1 DESCRIPTION

The material shall be a zinc co-ordination product of maneb in the form of a yellowish powder.

.2 ACTIVE INGREDIENT

.2.1 Mancozeb (34/1/m/1.2, methods not included in CIPAC 1)

The mancozeb content (minimum 85%) shall be declared and when determined the percentage obtained shall be not less than 95% of that declared.

.2.2 Manganese (-/m/1.3)

Minimum: 20% of the mancozeb found under .2.1 (Note: On a result of 90% mancozeb the permitted minimum content of manganese would be 18.0%).

.2.3 Zinc (-/m/1.4)

Minimum: 2.5% of the mancozeb found under .2.1 (Note: On a result of 90% mancozeb the permitted minimum content of zinc would be 2.25%.).

2.4 Ethylenebisdithiocarbamate Ion (-/m/1.5)

Minimum: 77.5% of the mancozeb found under .2.1 (Note: On a result of 90% mancozeb the permitted minimum content of ethylenebisdithiocarbamate ion would be 69.75%.).

2.5 Characterization (-/m/1.6)

The material shall pass the test.

3 IMPURITIES

3.1 Water (-/M/1.7)

Maximum: 1%

MANCOZEB WETTABLE (DISPERSIBLE) POWDERS

Provisional Specification

.1 DESCRIPTION

The product shall consist of a homogeneous mixture containing mancozeb as the sole active ingredient together with fillers and any necessary formulants. It shall be a fine powder, free from visible extraneous materials and hard aggregates.

It shall be formulated from mancozeb complying with the specifications for mancozeb technical.

.2 ACTIVE INGREDIENT

.2.1 Mancozeb (34/3/m/1.2, methods not included in CIPAC 1)

The mancozeb content (minimum 70%) shall be declared and when determined the percentage obtained shall not be below that declared by more than 2 percentage units.

.2.2 Zinc (-/m/1.3)

Minimum: 2.5% of the mancozeb found under .2.1 (Note: On a result of 80% mancozeb the permitted minimum zinc content would be 2.0%.).

.2.3 Manganese (-/m/1.4)

Minimum: 20% of the mancozeb found under .2.1 (Note: On a result of 80% mancozeb the permitted minimum manganese content would be 16.0%.).

.2.4 Ethylenebisdithiocarbamate Ion (-/m/1.5)

Minimum: 77.5% of the mancozeb found under .2.1 (Note: On a result of 80% mancozeb the permitted minimum ethylenebisdithiocarbamate ion would be 60.0%.).

.2.5 Characterization (-/m/1.6)

The product shall pass the test.

.3 IMPURITIES

.3.1 Water (-/M/1.7)

Maximum: 2.0%

.4 PHYSICAL PROPERTIES

.4.1 Persistent Foam (-/M/1.12)

Maximum: 25 ml after 1 min.

.4.2 pH of 1% Aqueous Dispersion (-/M/1.10)

Shall be between 5.0 and 9.0

.4.3 Suspensibility (Note: This requirement shall not apply when the concentration of the mancozeb in the dilute spray is greater than 1%. Specification requirements and methods of determination for such cases are under consideration.) (-/M/1.9)

A mimimum of 50% of the mancozeb content, declared under .2.1, shall be in suspension after 30 min in CIPAC Standard Water A when determined on the sample as received and in CIPAC Standard Water C after the Heat Stability test.

.4.4 Wet Sieve Test (-/M/1.8)

Minimum: 99.8% through a 150 µm test sieve and 98% through a 75 µm test sieve.

.4.5 Wettability of the Powder (-/M/1.11)

Shall be completely wetted in 1 min.

.5 STORAGE STABILITY

.5.1 Heat Stability (-/M/1.13)

After storage at 54 + 2°C for 14 days the product shall continue to comply with .2.1, .4.2, .4.3, .4.4 and .4.5.

6 CONTAINERS

Mancozeb wettable (dispersible) powders must be packaged in suitable, clean containers which do not affect, and are not affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for Mancozeb wettable (dispersible) powders are not subject to DOT regulation.

METHYL BROMIDE TECHNICAL

Provisional Specification

.1 DESCRIPTION

The material shall consist, essentially, of methyl bromide, a colorless volatile liquid or gas, free from extraneous impurities or added modifying agents, with the exception of chloropicrin.

.2 ACTIVE INGREDIENT

.2.1 Methyl Bromide (Method not in CIPAC or AOAC Handbooks; GLC Method available from the manufacturer.)

The methyl bromide content (100% without chloropicrin; minimum 98% with chloropicrin) shall be declared and when determined, the content obtained shall not differ from that declared by more than ± 0.2 percentage units.

.2.2 Identity (Method not in CIPAC 1, GLC Method available from manufacturer.)

Shall comply.

.3 IMPURITIES

.3.1 Acidity

Maximum acidity: 15 ppm calculated as HBr.

3.2 Water

Maximum 100 ppm.

4 CONTAINERS

Methyl bromide must be packaged in suitable, clean, pressure-type containers which do not affect, and are not affected by the product contained. The container must adequately protect the product from exterior influences. Outer surfaces of containers

must be so constructed or treated as to prevent corrosion or deterioration of container and of the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and recycling or disposal of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Cylinders for methyl bromide shall comply with DOT specification 4 BA 240 or 4 BW 240.

1½ lb. cans shall comply with DOT 2'P specifications. Cans shall be packed in fiberboard containers suitable for export shipment.

DOT regulation 49 CFR 173.353 is applicable.

ZINC PHOSPHIDE TECHNICAL

Provisional Specification
(FAO Specification 69/1/S/2:)

.1 DESCRIPTION AND IDENTITY

.1.1 Description

The material shall consist, essentially, of zinc phosphide with added coloring matter as specified, as a free-flowing powder, free from lumps, extraneous impurities, added modifying agents or odors which may limit its suitability for baiting rodents or impair its effectiveness.

.1.2 Identity (69/1/m/1.4, Method not in CIPAC 1)

Shall comply.

.2 ACTIVE INGREDIENT

.2.1 Zinc Phosphide (CIPAC 1, 69/1/M/1.2)

.2.1.1 Minimum Content

Minimum: 80.0%.

.2.1.2 Declared Content

The zinc phosphide content shall be declared and when determined, the content obtained shall not differ from that declared by more than ± 5% of the declared content.

.3 PHYSICAL PROPERTIES

.3.1 Dry Sieve Test (-/M/1.3)

Maximum: 0.5% retained on a 150 µm test sieve, and

Maximum: 8.0% retained on a 65 µm test sieve.

.4 CONTAINERS

Zinc phosphide technical shall be packaged in suitable clean containers which do not affect, and are not

affected by the product contained. The container which may be a bag, box, fiber or metal drum, must be adequate to protect the product from exterior influences including moisture, contamination, oxidation, compaction, and from loss by vaporization. Containers must provide an adequate moisture barrier by an inner bag or liner of polyethylene of sufficient thickness, or alternative means giving the same or better protection. The inner liner or bag must be carefully sealed after filling. Outer surfaces of containers must be so constructed or treated as to prevent deterioration or disintegration of the container and the product label.

The pesticide product, container and contents, must be sufficiently stable to meet all product specifications for a period of at least two years. If the product is less stable, the seller shall so inform the buyer in writing.

Directions for use shall include directions for safe decontamination and disposal or recycling of emptied containers.

Containers must comply with all applicable national and international transportation, safety and other regulations.

Containers for zinc phosphide technical shall comply with DOT regulations 49 CFR 173.363 and .365.