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MATERIAL SAFETY DATA SHEET
MASTER FLY

1 PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT NAME: MASTER FLY
CHEMICAL FAMILY: FURANICOTINYL INSECTICIDE
PRODUCT DESCRIPTION: INSECTICIDE FOR FLIES
MANUFACTURER: RPC PEST CONTROL COMPANY LTD.
P.O.BOX 128 – NES HARIM 99885 - ISRAEL
TEL.: 1700-500-405
E-mail: misrad@rpc.co.il

2 HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]
Acute toxicity, Oral (Category 4)
Classification according to EU Directives 67/548/EEC or 1999/45/EC
Harmful if swallowed. Causes eye irritation. Avoid contact with the skin, eyes and clothing. Wash thoroughly after handling. May cause long-term adverse effects in the aquatic environment. Toxic to soil organisms. Toxic to bees.
Routes of exposure: Ingestion, skin contact, eye contact.
Immediate effects: No significant signs of systematic toxicity were observed in animals exposed to very high oral, dermal or inhalation dosages of the product.
Eye Contact: This product can cause brief and/or minor eye irritation. The expected adverse health effects resulting from an exposure may include redness and possible swelling.
Skin: This product can cause brief and/or minor irritation. The expected adverse effects resulting from an exposure may include redness and possibly some minor swelling. This product is slightly toxic when absorbed through skin. This product is not expected to cause allergic reactions.
Ingestion: May be harmful if swallowed. Do not take internally.
Inhalation: This product is minimally toxic when inhaled.

3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS CONTRIBUTING TO THE HAZARD:
DINOTEFURAN 12.00%
CAS NUMBER 165252-70-0
SYMBOLS: Xn, N
R-PHRASES R22, R53, R56, R57
Full text of R-Phrases and S-Phrases of the product: see section 15

4 FIRST AID MEASURES

General: When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
Eye: Hold eye open and rinse slowly and gently with water for 15 – 20 minutes. Remove contact lenses, if present, after the first 15 minutes, and then continue rinsing eyes. Get medical attention if irritation develops and persists.
Skin: Wash off immediately with soap and plenty of water. If symptoms persist, call a physician.
Inhalation: If inhaled, move the person to fresh air. If person is not breathing, call an ambulance, then give artificial respiration, preferably mouth to mouth if possible. Call a physician.
Ingestion: If swallowed immediately contact a doctor or Poisons Center and follow the advice given. Keep under medical supervision. Have the person sip a glass of water if able to swallow. Do not give anything by mouth to an unconscious person
Notes to physician: There is no specific antidote if this product is ingested.

5 FIRE – FIGHTING MEASURES

Extinguishing media: Carbon dioxide, dry agent, water spray, foam.
Hazard for combustion products: In the event of fire, carbon monoxide, carbon dioxide, nitrogen oxides, sulphur oxides, hydrogen chloride and hydrogen fluoride may be released.
Precautions for fire fighters: Fire fighters should wear full protective gear including self-contained breathing apparatus. Keep unnecessary people away and move other personnel to windward side of fire. Bund area with sand or earth to prevent contamination of drains or waterways. Dispose of fire control water or other extinguishing agent and spillage safely later.

6 ACCIDENTAL RELEASE MEASURES

Personal precaution, protective equipment and emergency procedures: No special requirements. Use personal protective equipment. Avoid direct contact with releasing product.
Environmental precautions: Do not allow to enter drains, groundwater, soil and open water courses.
Methods and material for containment and cleaning up: Protect damage packaging. Collect spilled product into suitable containers, which can be labeled and sealed. Utilize collected material in accordance with regulations. Wash contaminated surface with plenty of water.

7 HANDLING AND STORAGE

Precautions for safe handling: No special measures necessary if stored and handled correctly. Read label before use.
Observe good personal hygiene and wear protective clothing in accordance with information on label or set out in section 8.
Special measures for protection against fire and explosion: No special precautions necessary. The product is non-combustible. Product is not explosive.

7 HANDLING AND STORAGE

Industrial hygiene:

- Ensure good ventilation (overall and local exhausted ventilation)
- Ensure place for eyes and skin rinsing
- Wash hands with soap and water before eating, smoking and after work
- Use general caution while working with chemical substances **Conditions for**

safe storage, including any incompatibilities:

Keep only in the original container

Protect from temperatures above 40° C

Keep the product away from children, food, beverage and animal feed. Keep away from odorous materials

The product retains its physical and chemical properties for at least 3 years if stored in original, unopened containers, at moderate temperatures

Specific and use(s): biocide product

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Occupational exposure limit value: There is not exposure standard to dangerous components of this product.

Exposure controls

Technical exposure controls: adequate ventilation.

Personal protection:

a) **Respiratory protection-** is not required.

b) Hand protection- wear protective gloves.

c) Eye protection- no special requirements.

d) Skin protection- no special requirements.

Professional pest control product: Avoid contact with the skin, eyes and clothing. Wash hands after use.

Take off immediately all contaminated clothing. Store working cloth separately. Keep away from food, drink and animal feeding stuffs. Hands and/or face should be washed before breaks and at the end of the shift.

Environmental exposure controls: Do not allow to enter large amounts of product into ground water, sewage, waste water or soil.

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Liquid
pH:	6.0 – 7.0 (Determined at 1% solution).
Flash point:	Not flammable.
Solubility:	Soluble in water
Density:	0.95 – 1,03 g/cm^3

10 STABILITY AND REACTIVITY

Reactivity: Under the properly conditions of storage and handing – no reactivity
Chemical stability: Stable under normal conditions (see Section 7 – storage conditions)
Possibility of hazardous reactions: No
Conditions to avoid: High temperature, high humidity
Incompatible materials: Odorants perfumes, etc.
Hazardous decomposition products: No hazardous decomposition products if stored and handled as prescribed/indicated

11 TOXICOLOGICAL INFORMATION

PRIMARY ROUTE OF EXPOSURE:
Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.
Acute Toxicity/Effects
Acute toxicity
Assessment of acute toxicity: Relatively nontoxic after single ingestion. Relatively nontoxic after short-term inhalation. Relatively nontoxic after short-term skin contact.
Oral
Type of value: LD50 Species: rat (female) Value calculated: > 10,000 mg/k
Inhalation
Type of value: LC50 Species: rat (male/female) Value: > 34.00 mg/l Exposure time: 4 h.
Dermal
Type of value: LD50 Species: rat (male/female) Value: > 10,000 mg/kg
Information on toxicological effects:
Irritation / corrosion
Assessment of irritating effects: May cause slight irritation to the skin. May cause moderate but temporary irritation to the eyes.
Sensitization
Assessment of sensitization: There is no evidence of a skin-sensitizing potential.
Repeated dose toxicity
Assessment of repeated dose toxicity: The product has not been tested. The statement has been derived from the properties of the individual components. No substance-specific organ toxicity was observed after repeated administration to animals.

11 TOXICOLOGICAL INFORMATION

Genetic toxicity
Assessment of mutagenicity: The product has not been tested. The statement has been derived from the properties of the individual components. Mutagenicity tests revealed no genotoxic potential.

11 TOXICOLOGICAL INFORMATION

Carcinogenicity
Assessment of carcinogenicity: The product has not been tested. The statement has been derived from the properties of the individual components. The results of various animal studies gave no indication of a carcinogenic effect.

Reproductive toxicity
Assessment of reproduction toxicity: The product has not been tested. The statement has been derived from the properties of the individual components. The results of animal studies gave no indication of a fertility impairing effect.

Teratogenicity
Assessment of teratogenicity: The product has not been tested. The statement has been derived from the properties of the individual components. Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals.

Other Information
Misuse can be harmful to health.

Symptoms of Exposure
No significant reaction of the human body to the product known.

Medical conditions aggravated by overexposure
Individuals with pre-existing diseases of the respiratory system, skin or eyes may have increased susceptibility to excessive exposures.

Toxicological data for hazardous ingredient-Dinotefuran:

Acute toxicity
LD50 Oral - rat - male - 2.804 mg/kg
LD50 Oral - rat - female - 2.000 mg/kg
LD50 Dermal - rat - > 2.000 mg/kg

Skin corrosion/irritation
Skin - rabbit - Mild skin irritation

Serious eye damage/eye irritation
Eyes - rabbit - Mild eye irritation

Respiratory or skin sensitization
guinea pig - Did not cause sensitization on laboratory animals.

SUBCHRONIC:
Dinotefuran was tested in 13-week dietary toxicity studies in rats, mice and dogs. In the rat study, a NOEL of 500 ppm was established, based on reduced body weight gain in females and adrenal cortical vacuolation in males and a NOAEL of 5,000 ppm based on marked growth retardation at 25,000 ppm (adrenal cortical vacuolation not adverse). A NOEL of 25,000 ppm was established in the mouse study based on reduced body weight gain at 50,000 ppm. In the dog 13-week dietary study, a NOEL of 8,000 ppm was established based on reduced body weight gain. No target organs were identified in subchronic inhalation or dermal toxicity studies in rats.

11 TOXICOLOGICAL INFORMATION

CHRONIC/CARCINOGENICITY:

Dinotefuran was tested in lifetime studies with rats and mice and a one-year study with dogs. In common with the subchronic studies in these species, no specific target organs could be identified. In the 78-week mouse study a NOAEL of 2500 ppm was established, based on decreased weight gain and a decrease in circulating platelet counts. In the 104-week rat study a NOAEL of 2000 ppm was established, based on a decrease in weight gain in females. There were no treatment-related effects in rats or mice on survival or the nature and incidence of neoplastic and adverse non-neoplastic histomorphological findings in either species at any dose level. In the 52-week dog study a NOAEL of 16000 ppm was established based on decreased weight gain in both sexes and decreased food consumption in females.

NEUROTOXICITY:

Dinotefuran did not produce any functional or histomorphological evidence of neurotoxicity in acute (gavage) and 13-week (dietary) neurotoxicity studies in rats. The NOEL for neurotoxicity in the acute study was 1,500 mg/kg, the highest dose level administered. The NOEL for neurotoxicity in the 13-week dietary study was 50,000 ppm. The NOEL for all effects in this study was 5,000 ppm based on reduced body weight gain and food consumption.

DEVELOPMENTAL TOXICITY:

In a developmental toxicity study of Dinotefuran technical in rats the maternal NOAEL was 300 mg/kg/day based on reduced weight gain, food consumption and water intake at 1000 mg/kg/day. Dinotefuran technical did not produce developmental effects in rats at doses up to 1000 mg/kg/day (the highest does tested). In a study with rabbits the maternal NOAEL was 52 mg/kg/day based on reduced weight gain, food consumption and water intake and clinical signs noted at 300 mg/kg/day and pathology findings in the liver and stomach at 125 mg/kg/day and higher. The developmental NOEL was 300 mg/kg/day.

REPRODUCTION:

Dinotefuran technical was tested in a two-generation rat reproduction study at doses of 0, 300, 1000, 3000 and 10000 ppm. The NOAEL for systemic toxicity in parental animals was 3000 ppm based on decreased body weight gain and food consumption and decreased spleen and thyroid weights at the highest dose level evaluated (10000 ppm). The NOAEL for reproductive effects was 10000 ppm. The NOAEL for effects on the offspring was 3000 ppm based on reduced preweaning weight gain at 10000 ppm.

MUTAGENICITY:

Dinotefuran technical was negative in the following in vitro assays: Ames Assay, mouse lymphoma (L5178Y), mammalian cytogenetics (CHL/IU) or DNA Repair. Dinotefuran technical was negative in the following in vivo assays: mouse micronucleus. Overall, Dinotefuran technical does not present a genetic hazard.

12 ECOLOGICAL INFORMATION

Toxicity
Aquatic toxicity
Assessment of aquatic toxicity:
There is a high probability that the product is not acutely harmful to fish. There is a high probability that the product is not acutely harmful to aquatic invertebrates. There is a high probability that the product is not acutely harmful to aquatic plants.
Toxicity to fish
Information on: 1 Guanidine, N''-methyl-N-nitro-N'-[(tetrahydro-3-furanyl)methyl]-
LC50 (96 h) > 100 mg/l, Oncorhynchus mykiss
LC50 (96 h) > 100 mg/l, Cyprinus carpio
Aquatic invertebrates
Information on: 1 Guanidine, N''-methyl-N-nitro-N'-[(tetrahydro-3-furanyl)methyl]-
EC50 (48 h) > 1,000 mg/l, Daphnia magna
EC50 (96 h) 0.79 mg/l, Mysidopsis bahia
Aquatic plants
Information on: 1 Guanidine, N''-methyl-N-nitro-N'-[(tetrahydro-3-furanyl)methyl]-
EC50 (72 h) 97.6 mg/l (biomass), Pseudokirchneriella subcapitata
Other terrestrial non-mammals
LD50 0,022 µg/bee, Apis mellifera
The product has not been tested. The statement has been derived from the properties of the individual components.
OTHER ENVIRONMENTAL INFORMATION:
This pesticide is toxic to shrimp. Do not apply directly to water, to areas where surface water is present or to intertidal areas below mean high water mark. Do not apply where runoff is likely to occur. Do not apply where weather conditions favor drift from areas treated. Do not contaminate water when cleaning equipment or disposing of equipment washwater or rinsate.
Persistence and degradability:
Biodegradability aerobic - Exposure time 138,4 d
Remarks: According to the results of tests of biodegradability this product is not readily biodegradable
Bioaccumulative potential: No data
Mobility in soil: No data
Results of PBT and vPvB assessment: No data
Other adverse effects:
Product is classified as harmful to the aquatic environment and bees

13 DISPOSAL CONSIDERATION

General Disposal: Follow container label instructions for disposal wastes generated during use in compliance with the product label. Never place unused product down any indoor or outdoor drain.
Container Disposal: Wrap and discard in trash.

14 TRANSPORT INFORMATION:

ADR: Not dangerous goods in the meaning of ADR/RID, ADNR, IMDG-Code, ICAO/IATA-DGR.

Further information: Not dangerous goods in the meaning of ADR/RID, ADNR, IMDG-Code, ICAO/IATA-DGR.

15 REGULATORY INFORMATION, CLASSIFICATION AND LABELING ACCORDING TO EEC DIRECTIVE

R- PHRASES:

R 21/22 - Harmful in contact with skin and if swallowed.
R36: Irritating to eyes.
R43: May cause Sensitization by skin contact.
R 51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R57: Toxic to bees

S- PHRASES:

S2: KEEP OUT OF REACH OF CHILDREN
S24/25: AVOID CONTACT WITH SKIN AND EYES.
S26: IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH A PLENTY OF WATER AND SEEK MEDICAL ADVICE.
S27: TAKE OFF IMMEDIATELY ALL CONTAMINATED CLOTHING.
S28: AFTER CONTACT WITH SKIN WASH IMMEDIATELY WITH PLENTY OF SOAP AND WATER.
S29: DO NOT EMPTY INTO DRAINS.
S45: IN CASE OF ACCIDENT OF IF YOU FEEL UNWELL SEEK MEDICAL ADVICE IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE)
S62: IF SWALLOWED DO NOT INDUCE VOMITING: SEEK MEDICAL ADVICE IMMEDIATELY AND SHOW THIS CONTAINER OR LABEL.
CONTAIN SUBSTANCES, WHICH ARE DANGEROUS FOR THE AQUATIC ENVIRONMENT. LOCAL REGULATIONS, IF ANY, SHOULD BE APPLIED TO CLASSIFICATION AND LABELLING.

16 OTHER INFORMATION

THE MINISTRY OF ENVIRONMENT PROTECTION DETERMINED THAT THE USAGE OF THIS PRODUCT/ SUBSTANCE IN CONTRADICTION TO THE ENCLOSED INSTRUCTION MAY ENDANGER THE ENVIRINMENT AND PUBLIC HEALTH AND IS AGAINST THE LAW.

This MSDS summarizes our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products. The information contained in this sheet is based on the knowledge of the product at the date of publication and is given in good faith.

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SIGNED: TRIGUBOFF BERNARDO - ECHNICAL & CHEMICAL CONSULTANT