ROTAM

龍燈農業化工股份有限公司
ROTAM AGROCHEMICAL CO., LTD.

7/F. Cheung Tat Centre,
No.18, Cheung Lee Street,
ChaiWan, Hong Kong.

Tel.: 2896 5608, 2896 0662
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MATERIAL SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Rotam Agrochemical Co. Ltd
7/F. Cheung Tat Centre, No.18, Cheung Lee Street, ChaiWan, Hong Kong.
Tel.: 2896 5608, 2896 0662
Fax.: 2558 6577, 2896 5730
Emergency Telephone Numbers: (852) 28965608 Hong Kong
Product Name: DEFT® 200g/kg Water Dispersible Granule
Product Code: RTFH-005
Chemical Name of Active Ingredient (IUPAC):
Methyl 2-(4-methoxy-6-methyl-1,3,5-triazin-2-ylcarbamoylsulfamoyl) benzoate
Chemical Formula of Active Ingredient:
$C_{14}H_{15}N_5O_6S$
CAS/EPA/EU Registry Number of Active Ingredient:
74223-64-6 (CAS); 441 (CIPAC)

Section 2. Composition/Information on Ingredients

Component	CAS Number	Content (g/kg)
Metsulfuron methyl	74223-64-6	Min. 200
Inert ingredients	Not Applicable	Max. 800

Section 3. Hazards Identification

CAUTION! Avoid contact with skin,eyes or clothing. Avoid breathing dust or spray mist. Keep out of reach of children. No evidence of carcinogenic, mutagenic, teratogenic or reproductive effects.

Section 4. First Aid Measures

Eye Contact: Flush with running water for at least 15 minutes while holding eyelids open to help flush out material. Get medical attention.
Skin Contact: Remove contaminated clothing and shoes immediately. Wash thoroughly with soap and water. Get medical attention.
Inhalation: Wearing proper respiratory protection before rescues. Immediately remove the affected victim from exposure to an area of fresh air. If not breathing, give artificial respiration; if breathe difficult, give oxygen. Get medical attention.
Ingestion: Immediately give 2 glasses of water and induce vomiting by touching back of throat with finger. Never give anything by mouth to an unconscious person. Get medical attention.

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Section 5. Fire Fighting Measures

Fire and Explosion Hazard: Negligible fire and explosion hazard.
Firefighting Media: Carbon dioxide, dry chemical or water spray to extinguish fire.
Firefighting Precaution: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Keep unnecessary people away. Use as little water as possible. Dike area of fire to prevent material run-off. Decontaminate emergency personnel with soap and water before leaving the fire area. Avoid breathing dusts, vapors and fumes from burning materials. Control run-off water.

Section 6. Accidental Release Measures

In case materials are released, use suitable protective equipment (Section 8) and follow all fire prevention procedures (Section 5). Keep unnecessary persons away. Isolate hazard area and deny entry. Move containers away from spill to a safe area. Shovel or sweep dry material or absorb spills with suitable absorbing material and place in a sealed container for disposal. Prevent liquid from entering sewers, waterways or low areas.

Section 7. Handling and Storage

Handling Precautions: Avoid getting in eyes or on skin, or clothing and breathe dust. Remove contaminated clothing immediately. Wash thoroughly after handling.
Storage Precautions: Store in a cool, dry area. Keep out of reach of children. Do not contaminate water, food, or feed by storage or disposal. Keep from contact with fertilizers, insecticides, fungicides, and seeds during storage.

Section 8. Exposure Controls/Personal Protection

Engineering Controls: Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Provide local exhaust or process enclosure ventilation system.
Eye/Face: To protect against accidental eye contact, goggles/face-shield should be worn.
Skin Protection: Rubber gloves should be worn. Wash thoroughly with soap and water after handling.
Respiratory Protection: Ensure good ventilation. For maximum protection, wear a supplied air, full-facepiece respirator, airlined hood, or full-facepiece self-contained breathing apparatus.

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Section 9. Physical and Chemical Properties

Appearance	Off-white granule
Odor	Odorless
Bulk Density	Approx. 0.55 g/ml
Water Solubility	Disperse in water

Section 10. Stability and Reactivity

Stability: Stable under the normal handling and storage conditions.
Incompatibilities: Avoid mixed with strong acids and alkalis.
Hazard Decomposition: Thermal decomposition may emit toxic fumes of CO_x, NO_x and organic sulfides.
Hazard Polymerization: Will not occur.

Section 11. Toxicological Information

Acute Oral Toxicity: LD_{50} for rats > 5000mg/kg
Acute Dermal Toxicity: LD_{50} for rabbits > 5050mg/kg
Acute Inhalation Toxicity: LC_{50} (4 h) for rats 6.4 mg/l.
Skin Irritation: Non-irritating to skin of rabbits .
Eye Irritation: Non-irritating to eyes of rabbits .

Section 12. Ecological Information

DEFT® has very low toxicity to aquatic organism and wild animals. Referenced technical active ingredient ecological information list as below:

Birds LD_{50} for mallard ducks >2510 mg/kg. Eight-day dietary LC_{50} for mallard ducks and bobwhite quail>5620 mg/kg diet.

Fish LC_{50} (96 h) for bluegill sunfish and rainbow trout >150 mg/l.

Bee Non-toxic to bees; LD_{50} >25 mg/bee

Environmental Fate:

Animals In mammals, following oral administration, metsulfuron-methyl is excreted predominantly unchanged. The methoxycarbonyl and sulfonylurea groups are only partly degraded, by *O*-demethylation and hydroxylation.

Plants In plants, undergoes complete degradation within a few days, by hydrolysis and conjugation. In addition to the hydroxymethyl analogue, other metabolites identified include methyl 2-(aminosulfonyl) benzoate and 2-(aminosulfonyl) benzoic acid. Rapidly metabolized within cereal plants.

Soil/Environment

In soil, metsulfuron-metjyl is broken down both by chemical hydrolysis and by microbial degradation. DT_{50} varies from 1 to 5 weeks, with

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breakdown being more rapid at lower soil pH, at higher temperatures, and at higher levels of soil moisture. K_{oc} 35 (pH 7).

Section 13. Disposal Considerations

Disposal of product would be treated, stored, transported, and disposed of according to the local waste regulation authority. Do not flush to surface water or sanitary sewer system.

Section 14. Transport Information

IMO Classification:
Proper Shipping Name :Environmentally hazardous substance, solid, N.O.S.
DEFT ® (Metsulfuron-methyl 200g/kg) Water Dispersible Granule
Class : 9
UN No.: 3077
Packing group : III
Marine Pollutant
.

IATA Classification:
Not regulated ! This substance is not subject to IATA DGR.

Section 15. Regulator Information

European/International Regulation:
Not regulated !

Section 16. Other Information

Disclaimer: The information provided by Rotam Agrochemical Co., Ltd contained herein is given in good faith and to the best of our knowledge. However, no warranty is expressed or implied.

Prepared by: Technical Development Department
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