FMC IINDIA PRIVATE LIMITED
TCG Finance Centre, 2nd Floor
Plot No – C 53, Block G,
Bandra Kurla Complex, Bandra (East)
Mumbai – 400 098 (INDIA)
PHONE NO: +91-22-6704 5504

SAFETY DATA SHEET

THIFLUZAMIDE 24% SC (CILPYROX)

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1. ♣ IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

N

Dangerous for the environment

Product name **THIFLUZAMIDE 24% SC (CILPYROX)**

Intended use Fungicide

Supplier: FMC IINDIA PRIVATE LIMITED
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Emergency telephone no. +91-2267045404

2. ♣ COMPOSITION/INFORMATION ON INGREDIENTS

2.1. THIFLUZAMIDE:

CAS name..... 2',6'-Dibromo-2-methyl-4'-trifluoromethoxy-4-trifluoromethyl-1,3-thiazole- 5-carboxanilide

CAS no 130000-40-7

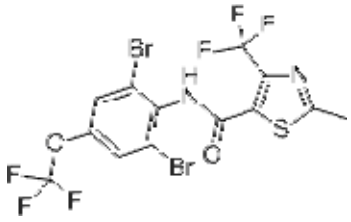
IUPAC name ..... N-[2,6-dibromo-4-(trifluoromethoxy)phenyl]-2-methyl-4-(trifluoromethyl)-1,3-thiazole-5-carboxamide

ISO name..... **Thifluzamide**

Molecular formula $C_{13}H_6Br_2F_6N_2O_2S$

Molecular mass 528.06

Structural formula .....



2.2. TYPICAL CONTENT

Active ingredient	Thifluzamide …….....	24.00	% by weight
Other ingredients	Emulsifier, carrier, etc.	76.00	% by weight

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3. ♣ HAZARDS IDENTIFICATION

3.1.	EU classification of the product .... according to 1999/45/EC as amended	N;R50/53 Very toxic to aquatic organisms, may cause long- term adverse effects in the aquatic environment.
	WHO classification	None (unlikely to present acute hazard in normal use)
3.2.	Environmental hazards	The product is toxic to aquatic organisms. See section 12.

4. ♣ FIRST AID MEASURES

4.1.	Signs and symptoms of exposure ..	Have the product container, label or Material Safety Data sheet with you when going for treatment. Tell person contacted the complete product name and the type and amount of exposure.
4.2.	Emergency and first aid procedures	
	Inhalation	Move the victim to fresh air. If breathing is irregular or stopped, administer artificial Keep patient warm and at rest. Call a physician immediately.
	Ingestion	If swallowed, seek medical advice immediately and show this container or label. Do not induce vomiting.
	Eye contact	Immediately flush eyes with much water or eyewash solution, occasionally opening eyelids, until no evidence of chemical remains. Remove contact lenses after a few minutes and flush again. See physician if irritation persist.
	Skin contact	Immediately flush skin with much water while removing contaminated clothing and shoes. Wash with water and soap. See physician if any symptom develops.
4.3.	Note to physician	There is no specific antidote against this substance. Treatment is supportive and symptomatic.

5. ♣ FIRE-FIGHTING MEASURES

5.1.	Extinguishing media and procedure	Dry chemical or carbon dioxide for small fires, water spray or foam for large fires. Use water spray to keep fire-exposed containers cool. Approach fire from upwind to avoid hazardous vapours and toxic decomposition products. Fight fire from protected location or maximum possible distance. Avoid heavy hose streams. Dike area to prevent water runoff. Firemen should wear self-contained breathing apparatus and protective clothing.
5.2.	Hazardous decomposition products in a fire	The essential breakdown products are volatile, toxic, irritant and inflammable compounds such as nitrogen oxides, sulphur dioxide, carbon monoxide and carbon dioxide.
5.3.	Unusual fire and explosion hazards	–

6. ♣ ACCIDENTAL RELEASE MEASURES

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6.1. Personal protection..... Observe all protection and safety precautions when cleaning up spills. Depending on the magnitude of the spill this may mean wearing safety glasses, gloves and rubber boots. See section 8, Personal protection.

6.2. Steps to be taken in case of spill .....It is recommended to have a predetermined plan for the handling of spills. Empty vessels for the collection of spills should be available.

Stop the source of the spill immediately if safe to do so. Contain the spill to prevent any further contamination of surface, soil or water.

Spills on the floor or other impervious surface should be swept up immediately and collected in suitable containers. Rinse area with strong industrial detergent and much water. Absorb wash liquid onto suitable inert absorbent such as universal binder, Fuller's earth, bentonite or other absorbent clay and transfer contaminated absorbent to similar containers. Washings must be prevented from entering surface water drains.

Large spills which soak into the ground should be dug up and placed in suitable containers.

Spills in water should be contained as much as possible by isolation of the contaminated water. The contaminated water must be collected and removed for treatment or disposal. Uncontrolled discharge into water courses must be alerted to the appropriate regulatory body.

The used containers should be properly closed and labelled. Refer to section 13 for disposal.

7. ♣ HANDLING AND STORAGE

7.1. Precautions to be taken in handling In an industrial environment it is recommended to avoid all personal contact with the product, if possible by using closed systems with remote system control. Otherwise the material should preferably be handled by mechanical means. Adequate ventilation or local exhaust ventilation is required. The exhaust gases should be filtered or treated otherwise. For personal protection in this situation, see section 8.

For its use as a pesticide, first look for precautions and personal protection measures on the officially approved label on the packaging or for other official guidance or policy in force. If these are lacking, see section 8. The precautions of section 8 are primarily meant for handling of the undiluted product and for preparing the spray solution but can be recommended for spraying as well.

7.2. Precautions to be taken in storing The product is stable under normal conditions of warehouse storage.

Store in closed, labelled containers. The storage room should be constructed of incombustible material, closed, dry, and ventilated and with impermeable floor, without access of unauthorized persons or children. The room should exclusively be used for storage of chemicals and especially foodstuffs, drinks, feed or seed should not be present. A warning sign reading "POISON" is recommended.

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7.3.	Specific use	The product is a registered pesticide and may only be used for the applications it is registered for in accordance with a label approved by the regulatory authorities.
7.4.	Fire and explosion precautions.....	Keep away from sources of ignition and protect from exposure to fire and heat.

8. ♣ EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1.	Exposure limit values.....	Not established for Thifluzamide. However, other threshold limit values defined by local regulations may exist and must be observed.
8.2.	Personal protection.....	When used in a closed system, personal protection equipment will not be required. The following is meant for other situations, when the use of a closed system is not possible, or when it is necessary to open the system. Consider the need to render equipment or piping system non-hazardous before opening.
	Respiratory protection	A combination gas, vapor and particulate respirator may be necessary until effective technical measures are installed. Protection provided by air-purifying respirators is limited. Use a self-contained breathing apparatus in cases of emergency spills, when exposure levels are unknown, or under any circumstances where air-purifying respirators may not provide adequate protection.
	Protective gloves	Wear chemical resistant gloves, such as barrier laminate, butyl rubber, nitrile rubber or Viton. The breakthrough times of these materials for Thifluzamide are unknown, but it is expected that they will give adequate protection based on the low dermal toxicity of the substance.
	Eye protection	Wear safety glasses. It is recommended to have an emergency eye wash fountain immediately available in the work area when there is a potential for eye contact.
	Other protection	Wear coveralls or long-sleeved shirt and long pants. Wear shoes plus socks.
8.3.	Work/hygienic practices	Keep all unprotected persons and children away from working area. Avoid contact with eyes, skin or clothing. Avoid breathing spray mist. Wash thoroughly with water and soap after handling. Remove contaminated clothing immediately and wash before reuse.
8.4.	Environmental exposure controls	See section 13.

9. ♣ PHYSICAL AND CHEMICAL PROPERTIES

9.1.	Physical state.....	Viscous liquid
9.2.	Colour.....	White to Brown
9.3.	Odour.....	Characteristic
9.4.	Melting point.....	Not available
9.5.	Boiling point.....	Not available
9.6.	Relative density.....	1.12 to 1.15 gm/cc
9.7.	Viscosity.....	300 to 600 CPS
9.8.	Solubility in water.....	Form emulsion with water
9.9.	Solubility in organic solvents	Not available

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9.10.	Partition coefficient n-octanol/water	Not available
9.11.	Surface tension	Not available
9.11.	pH	6 to 8 (1% solution in water at 30°C)
9.12.	Flash point	Not available
9.13.	Autoignition temperature	Not auto-flammable
9.14.	Explosive properties	Not explosive
9.15.	Oxidizing properties	Not oxidizing

10. ♣ STABILITY AND REACTIVITY

10.1. Thermal decomposition ..... This product is unlikely to react or decompose under normal storage conditions. Stable at ambient temperatures.

10.2. Hazardous decomposition products See 5.2.

10.3. Materials to avoid ..... –

11. ♣ TOXICOLOGICAL INFORMATION

11.1. No toxicity data are available for this material. Toxicity data for the active ingredient are listed below

Oral LD50 – rat > 6500 mg/kg
Dermal LD50 – rabbit > 5000 mg/kg
Eye Irritation – rabbit: moderate irritation
Skin Irritation – rabbit: slight irritation
Inhalation LC50-rat: > 5 mg/L for 4 hrs
LD50 > 5,000 mg/kg

Mutagenicity Not mutagenic

12. ♣ ECOLOGICAL INFORMATION

12.1. Ecotoxicity .....
Carp, 48hour LC50:2.9 ppm Daphnia
magna, 3hour LC50: 6 ppm
Oyster Shell (Crassostrea virginica), 96hour Deposition EC50: >0.81 mg/l
Mysid shrimp (Mysidopsis bahia), 96hour LC50: 0.42 mg/l
Sheepshead minnow (Cyprinodon variegatus), 96hour LC: > 0.5 mg/l

The above Environmental Toxicity data are from studies conducted on the technical material.

13. ♣ DISPOSAL CONSIDERATIONS

13.1. Waste disposal method ..... Do not contaminate ponds, waterways or ditches with chemical or used container. Do not dispose of waste into sewer.
Where possible recycling is preferred to disposal or incineration.
If recycling is not practicable, dispose of in compliance with local regulations.

Do not contaminate water, foodstuffs, feed or seed by storage or disposal.

13.2. Packaging/container disposal ..... Triple rinse (or equivalent) and offer for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill.

Disposal of waste and packaging must always be in accordance with all applicable local regulations.

14. ♣ TRANSPORT INFORMATION

ADR/RID CLASSIFICATION

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Proper shipping name ..... Environmentally hazardous substance, liquid, n.o.s. (Thifluzamide)
Class..... 9
UN no 3082
Packaging group..... III

IMDG CLASSIFICATION

Proper shipping name ..... Environmentally hazardous substance, liquid, n.o.s. (Thifluzamide)
Class..... 9
UN no 3082
Packaging group..... III
Marine Pollutant..... Marine pollutant

IATA CLASSIFICATION

Proper shipping name ..... Environmentally hazardous substance, liquid, n.o.s. (Thifluzamide)
Class..... 9
UN no 3082
Packaging group..... III

15. ♣ REGULATORY INFORMATION

IN THE EU

Classification and labelling
(according to 1999/45/EC as amended):

Hazard symbol ..... N

Dangerous for the environment

R-phrases ..... R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrases..... S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S35: This material and its container must be disposed of in a safe way.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S57: Use appropriate container to avoid environmental contamination.

Other mentions..... To avoid risks to man and the environment, comply with the instructions of use.

16. ♣ OTHER INFORMATION

Further information

Used R-phrases ..... R22: Harmful if swallowed.
R36/37/38: Irritating to eyes, respiratory system and skin.
R38: Irritating to skin.
R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R63: Possible risk of harm to the unborn child.

This material should only be used by persons who are made aware of its hazardous properties and have been instructed in the required safety precautions.

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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INDIA

The information provided in this safety data sheet is believed to be accurate and reliable but uses of the product vary and situations unforeseen by FMC may exist. The user has to check the validity of the information under local circumstances.