

Material Safety Data Sheet

DOW AGROSCIENCES INDIA PVT. LTD.

Product name: TRANSFORM™ Insecticide

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DOW AGROSCIENCES INDIA PVT. LTD. encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: TRANSFORM™ Insecticide

Recommended use of the chemical and restrictions on use

Identified uses: Plant Protection Product

COMPANY IDENTIFICATION

DOW AGROSCIENCES INDIA PVT. LTD.
1ST FLOOR, BLOCK B, 02, GODREJ IT PARK
GODREJ BUSINESS DISTRICT
PIROJSHANAGAR, L.B.S MARG.,
400079 VIKHROLI, MUMBAI
INDIA

Customer Information Number:

(91) 22-6674-1500
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: (91-2356-272046)

Local Emergency Contact: 22-6674-1800

2. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

CASRN / EC-No. / Index-No.	Concentration	Component	Classification
CASRN 946578-00-3 EC-No. Not available Index-No. -	21.8%	Sulfoxaflor	Xn - R22 N - R50/53
CASRN 57-55-6 EC-No. 200-338-0 Index-No. -	< 5.0 %	Propylene glycol	Not classified

CASRN Not available	< 5.0 %	Sulfonated aromatic polymer, sodiumsalt	Xi - R36 R52/53
EC-No. —			
Index-No. —			

The full text of each R phrase is listed in section 16.

3. HAZARDS IDENTIFICATION

Hazard classification

Classified as hazardous according to regulatory criteria.

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Other hazards

No data available

4. FIRST AID MEASURES

Description of first aid measures

General advice: If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.

Skin contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Suitable emergency safety shower facility should be available in work area.

Eye contact: Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice. Suitable emergency eye wash facility should be available in work area.

Ingestion: No emergency medical treatment necessary.

Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed

Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIREFIGHTING MEASURES

Hazchem Code

2X

Suitable extinguishing media: To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam.

Unsuitable extinguishing media: No data available

Special hazards arising from the substance or mixture

Hazardous combustion products: Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: Sulfur oxides. Nitrogen oxides. Hydrogen fluoride. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: This material will not burn until the water has evaporated. Residue can burn.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Small spills: Absorb with materials such as: Clay. Dirt. Sand. Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Dow AgroSciences for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

Color	Tan
Odor	Mild
Odor Threshold	No test data available
pH	4.67 1% pH Electrode
Melting point/range	Not applicable
Freezing point	No test data available
Boiling point (760 mmHg)	No test data available
Flash point	closed cup > 100 °C <i>Closed Cup</i>
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammability (solid, gas)	Not applicable to liquids
Lower explosion limit	No test data available
Upper explosion limit	No test data available
Vapor Pressure	Not applicable
Relative Vapor Density (air = 1)	No test data available
Relative Density (water = 1)	1.1066
Water solubility	Not applicable
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	350 °C <i>EC Method A15</i>
Decomposition temperature	No test data available
Kinematic Viscosity	No data available
Explosive properties	No
Oxidizing properties	No, No significant increase (>5C) in temperature.
Liquid Density	1.1066 g/cm ³ at 20 °C <i>Digital density meter</i>
Molecular weight	No data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: No dangerous reaction known under conditions of normal use.

Chemical stability: Thermally stable at typical use temperatures.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Some components of this product can decompose at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

Incompatible materials: None known.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Toxic gases are released during decomposition.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Acute toxicity

Acute oral toxicity

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

As product:

LD50, Rat, male and female, > 5,000 mg/kg

Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product:

LD50, Rat, male and female, > 5,000 mg/kg

Acute inhalation toxicity

No adverse effects are anticipated from inhalation.

As product:

LC50, Rat, male and female, 4 Hour, Aerosol, > 2.21 mg/l No deaths occurred at this concentration.

Maximum attainable concentration.

Skin corrosion/irritation

Prolonged contact is essentially nonirritating to skin.

Serious eye damage/eye irritation

May cause slight eye irritation.

Corneal injury is unlikely.

Sensitization

Did not demonstrate the potential for contact allergy in mice.

For respiratory sensitization:

No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

For the active ingredient(s):

In animals, effects have been reported on the following organs:

Liver.

For the minor component(s):

In rare cases, repeated excessive exposure to propylene glycol may cause central nervous system effects.

Carcinogenicity

For the active ingredient(s): Has caused cancer in laboratory animals. However, the effects are species specific and are not relevant to humans.

Teratogenicity

For the active ingredient(s): Has caused birth defects in lab animals at high doses. In laboratory animals, excessive doses toxic to the parent animals caused decreased weight and survival of offspring. However, the effects are species specific and are not relevant to humans. These concentrations exceed relevant human dose levels.

Reproductive toxicity

For the active ingredient(s): In animal studies, has been shown to interfere with reproduction. However, the effects are species specific and are not relevant to humans. These concentrations exceed relevant human dose levels.

Mutagenicity

Animal genetic toxicity studies were negative.

Aspiration Hazard

Based on physical properties, not likely to be an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Ecotoxicity

Acute toxicity to fish

For similar material(s):

Material is toxic to aquatic organisms (LC50/EC50/IC50 between 1 and 10 mg/L in the most sensitive species).

As product:

LC50, *Oncorhynchus mykiss* (rainbow trout), static test, 96 Hour, > 939 mg/l, OECD Test Guideline 203

Acute toxicity to aquatic invertebrates

LC50, *Daphnia magna* (Water flea), static test, 48 Hour, > 880 mg/l, OECD Test Guideline 202 or Equivalent

For similar material(s):

LC50, saltwater mysid *Mysidopsis bahia*, 96 Hour, > 1 - < 10 mg/l

Acute toxicity to algae/aquatic plants

ErC50, diatom *Navicula* sp., 72 Hour, Growth rate inhibition, > 100 mg/l

Toxicity to Above Ground Organisms

Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).

oral LD50, *Colinus virginianus* (Bobwhite quail), > 2250mg/kg bodyweight.

oral LD50, *Apis mellifera* (bees), 48 Hour, 0.23micrograms/bee

contact LD50, Apis mellifera (bees), 48 Hour, 0.59micrograms/bee

Toxicity to soil-dwelling organisms

LC50, Eisenia fetida (earthworms), 14 d, 6.4mg/kg dry weight (d.w.)

Persistence and degradability

Sulfoxaflor

Biodegradability: Material is not readily biodegradable according to OECD/EEC guidelines.

Biodegradation: 0 %

Exposure time: 28 d

Method: OECD Test Guideline 310

Propylene glycol

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Biodegradation may occur under anaerobic conditions (in the absence of oxygen).

10-day Window: Pass

Biodegradation: 81 %

Exposure time: 28 d

Method: OECD Test Guideline 301F or Equivalent

10-day Window: Not applicable

Biodegradation: 96 %

Exposure time: 64 d

Method: OECD Test Guideline 306 or Equivalent

Sulfonated aromatic polymer, sodiumsalt

Biodegradability: No appreciable biodegradation is expected.

Bioaccumulative potential

Sulfoxaflor

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): 0.802 at 20 °C Measured

Propylene glycol

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): -1.07 Measured

Bioconcentration factor (BCF): 0.09 Estimated.

Sulfonated aromatic polymer, sodiumsalt

Bioaccumulation: No relevant data found.

Mobility in Soil

Sulfoxaflor

Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient (Koc): 40 Measured

Propylene glycol

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.
Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient (Koc): < 1 Estimated.

Sulfonated aromatic polymer, sodiumsalt

No relevant data found.

Results of PBT and vPvB assessment

Sulfoxaflor

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Propylene glycol

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Sulfonated aromatic polymer, sodiumsalt

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Other adverse effects

Sulfoxaflor

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Propylene glycol

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Sulfonated aromatic polymer, sodiumsalt

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

13. DISPOSAL CONSIDERATIONS

Disposal methods: If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

14. TRANSPORT INFORMATION

Classification for ROAD and Rail transport:

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(Sulfoxaflor)
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UN number	UN 3082
Class	9
Packing group	III
Environmental hazards	Sulfoxaflor

Classification for SEA transport (IMO-IMDG):

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(Sulfoxaflor)
UN number	UN 3082
Class	9
Packing group	III
Marine pollutant	Sulfoxaflor
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Proper shipping name	Environmentally hazardous substance, liquid, n.o.s.(Sulfoxaflor)
UN number	UN 3082
Class	9
Packing group	III

Hazchem Code

2X

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

Label

Classification and labeling have been performed according to regulations.

Hazard symbol and Indication of danger

N Dangerous for the environment

R-phrases

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

S-phrase(s)

- S35 This material and its container must be disposed of in a safe way.
 S57 Use appropriate containment to avoid environmental contamination.

To avoid risks to man and the environment, comply with the instructions for use.

16. OTHER INFORMATION

Full text of the R-phrases given in Section 2

- R22 Harmful if swallowed.
 R36 Irritating to eyes.
 R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
 R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Revision

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Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

TWA	8-hr Time Weighted Average
US WEEL	USA. Workplace Environmental Exposure Levels (WEEL)

DOW AGROSCIENCES INDIA PVT. LTD. urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.