



SHARDA CROPCHEM LIMITED

DOMNIC HOLM, 29th ROAD, BANDRA (W), MUMBAI 400050, INDIA; TEL: +912266782800; FAX: +912266782828/912266782808
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MATERIAL SAFETY DATA SHEET

TOPOL

(2,4-D sel d'amine 72% SL)

1.

PRODUCT AND COMPANY IDENTIFICATION:

Product name : 2,4-D Amine 72% SL
Formulation : Soluble concentrate
Use : A selective water soluble concentrate hormone type herbicide for the post-emergence control of broadleaf weeds in crops and grass pastures as indicated on the label.

2.

COMPOSITION / INFORMATION ON INGREDIENTS:

Active ingredient : 2,4-D amine
Chemical Name : 2,4-D-dimethylammonium (IUPAC)
CAS No. : 2008-39-1
Chemical Family : Aryloxyalkanoic acid
Chemical Formula : C₁₀H₁₃C₁₂N₃ (Mol. wt.: 266.1)
EC No : 217-915-8
UN no. : 3082
Hazardous components : 2, 4-D amine 720 g/L
EEC classification : Xn , Xi
R phrases : R 22, R 36/37

3.

HAZARD IDENTIFICATION:

Toxicity class: : WHO (a.i.) II; EPA (formulation) II
ADI (JMPR): : 0.01 mg/kg b.w.
NOEL: : 5 mg/kg b.w. for rats and mice (2 y)
Main hazard : Eye irritant.
Biological hazards: : Harmful to algae.
Eye contact: : Very irritating to eyes.
Skin contact: : Not irritating to skin.
Ingestion: : Harmful if large amounts are swallowed.
Inhalation: : Moderately irritating to respiratory tract.

4.

FIRST AID MEASURES:

Inhalation: : In case of inhalation, remove source of contamination, or leave contaminated area to fresh air as rapidly as possible.
Keep victim from contact for at least 2-3 days.
Skin contact: : If irritation occurs, remove contaminated clothing, shoes and leather goods (e.g.



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- Eye contact:** : watchbands, belts). Gently wipe off excess chemical. Wash skin gently and thoroughly with water and non-abrasive soap. **Seek medical advice immediately if irritation persists.**
- Ingestion:** : Immediately flush eyes with gently flowing lukewarm water or saline solution for 15 minutes, holding the eyelids open. Seek medical attention.
- Advice to the physician** : Unlikely to occur under occupational conditions. In case of deliberate ingestion, have victim rinse mouth thoroughly with water. Do not induce vomiting. Give plenty of water to drink. Seek medical advice immediately. If breathing has stopped, apply artificial respiration.
- : No specific antidote. Supportive care. Treatment based on judgement of physician in response to symptoms of patient. If lavage is performed, suggest endotracheal and/or oesophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach.

5.

FIRE FIGHTING MEASURES:

Extinguishing media:

Small fires:

Large fires:

Special hazards:

Protective clothing:

- : Carbon dioxide, dry chemical powders, regular foam and water spray.
- : Water spray, fog or regular foam. Move containers from fire area if you can do it without risk. Dike fire control water for later disposal; do not scatter the material. Do not use straight streams.
- : The material does not burn or burns with difficulty. It is not explosive. Should the chemical be involved in a general fire, ensure chemical protective clothing is used. It can produce toxic fumes of hydrogen chloride, which forms mists of hydrochloric acid with moisture and phosgene; and carbon monoxide.
- : Wear suitable personal protective equipment including approved respiratory protection.

6.

ACCIDENTAL RELEASE MEASURES:

Personal precautions:

Environmental precautions:

Large spills:

Small spills:

Spill/Leak Procedures:

- : Chemical protective clothing usage is advised, i.e. wear neoprene gloves, cotton overalls and safety goggles.
- : Do not allow spill to contaminate water supplies. Dike far ahead of liquid spills for later disposal.
- : Keep spectators away. Isolate hazard area and deny entry. Stay upwind, out of low-lying areas, and ventilate closed spaces before entering. Cover spill with absorbent material. Sweep into disposal container. Wash area with detergent and water and follow with clean water rinse. Do not allow spill to contaminate water supplies. Prevent entry into waterways, sewers, basements or confined areas.
- : Take up with sand or other noncombustible absorbent material and place into containers for later disposal.
- : Notify safety personnel, isolate and ventilate area, deny entry, and stay upwind. Shut off all ignition sources.

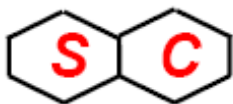
7.

HANDLING AND STORAGE:

Handling:

Storage:

- : Do not eat, drink, smoke or go to the toilet with pesticide-contaminated hands. Always wash hands thoroughly after handling pesticides or waste.
- : Store in a dry, cool, well-ventilated warehouse in well-labeled containers. Not



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to be stored next to foodstuffs and water supplies. Keep away from children and animals. Local regulations should be complied with. anyone

8.

EXPOSURE CONTROL / PERSONAL PROTECTION:

- Occupational exposure limits:** : 2, 4-D dimethylamine salt: None established; ACGIH TLV and OSHA PEL are 10 mg/M3 for the acid.
PELs are in accord with those recommended by OSHA, as in the 1989 revisions of the PELs.
- Engineering control measures:** : It is essential to provide adequate ventilation. The measures appropriate for a particular worksite depend on how this material is used and on the extent of exposure. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire, and other applicable regulations. If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal protective equipment including approved respiratory protection.
- Respirator:** : An approved respirator suitable for protection from dusts and mists of pesticides is adequate. Limitations of respirator use specified by the approving agency and the manufacturer must be observed.
- Clothing:** : Employee must wear appropriate protective (impervious) clothing and equipment to prevent repeated or prolonged skin contact with this substance.
- Gloves:** : Employee must wear appropriate synthetic protective gloves to prevent contact with this substance.
- Eye protection:** : The use of safety goggles is recommended.
Emergency eye wash: Where there is any possibility that an employee's eyes may be exposed to this substance; the employer should provide an eye wash fountain or appropriate alternative within the immediate work area for emergency use.

9.

PHYSICAL AND CHEMICAL PROPERTIES:

- Appearance:** : Clear dark/brown viscous liquid.
- Odour:** : Mild phenolic odour.
- Explosive properties:** : Not explosive.
- Flash point:** : Not applicable, water based formulation.
- Oxidising properties:** : No oxidising properties.
- pH:** : Average pH of 8.43 (1% aqueous dilution).
- Relative density:** : 1,16 g/ml at 20 °C.

10.

STABILITY AND REACTIVITY:

- Storage stability:** : 2, 4-D is stable at elevated temperatures and at low temperatures. Stable in aqueous solutions (after 18 hours at 20°C).
- Incompatibility:** : Oxidizing agents.
- Hazardous decomposition products:** : Hydrogen chloride, carbon monoxide, carbon dioxide.

11.

TOXICOLOGICAL INFORMATION:

- Acute oral LD50 :** : 600, 5 mg/kg in rats.
- Acute dermal LD50:** : > 4 347, 73 mg/kg in male rats.
- Acute inhalation LC50(4h) :** : 1,60 mg/l air for 600 SL formulation.
- Acute skin irritation:** : This formulation did not provoke dermal irritation or corrosion.



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- Acute eye irritation:** : Severe eye and surrounding tissue damage.
 - Dermal sensitisation:** : Probability of sensitization is very low.
 - Carcinogenicity:** : The carcinogenic status of 2, 4-D is not clear.
 - Teratogenicity:** : 2, 4-D exposure is unlikely to be teratogenic in humans at expected exposure levels.
 - Mutagenicity:** : Non-mutagenic.

12.

ECOLOGICAL INFORMATION:

ECOTOXICOLOGY :

- Daphnia:** : Practically non-toxic. The 48 hour LC50 is > 130, 3 mg/ *Daphnia magna*)
- Fish:** : Practically non-toxic. 96-hour LC50 is >114 mg/ (Rainbow trout)
- Birds:** : Practically non-toxic.
LD50: 625 to 2 000 mg/kg (bobwhite quail.)
- Freshwater algae:** : EC50 > 100 mg/ growth rate and biomass.)
- Bees:** : Oral: 72-hour LD50 >100 µg formulation/bee
NOEC: 25 µg formulation/bee.
Contact : 72-hour LD50 >200 µg formulation/bee
NOEC: 200 µg formulation/bee.
- Soil microorganisms:** : Low risk to soil microorganisms.
- Other:** : Parasitic Wasp: *Aphidius rhopalosiphi* : Harmless.
Spider *Pardosa sp.*: Harmless.
- Earthworms:** : 14 day LC50 : 682,5 mg/kg soil dry weight.
NOEC : 250 mg /kg soil dry weight.

FATE AND BEHAVIOUR IN SOIL:

- Rate of degradation:** : 2, 4-D residues peak approximately 14 days after application, and then degrade rapidly 14 to 42 days after application. At an application rate of 5.6 kg/ha, less than 5% remains after 70 days. Small amounts remain after 385 days when applied at rates 11.2 and 22.4 kg/ha.
- Adsorption/desorption:** : As the amount of 2, 4-D added to the soil increases, so the percentage of the total 2; 4-D adsorbed to the soil decreases. Higher amounts of substance have lower probabilities of being sorbed.

FATE AND BEHAVIOUR IN WATER:

- Rate and route of degradation:** : DT50 varies between 10 and 15 days for 0.5 µg/ml and 20 and 25 days for 7,0 µg/ml.

FATE AND BEHAVIOUR IN AIR:

- Rate and route of degradation:** : 2, 4-D is subject to photo-oxidation by reaction with hydroxyl radicals, and has an estimated half-life of 1 day. Volatilisation is negligible.

DISPOSAL CONSIDERATIONS:

- Controlled incineration:** : 2, 4-D is stable under normal temperatures and pressures.
The free acid is stable at its melting point; the dimethylamine salt decomposes at its melting point. Incineration at high temperatures (1000°C) with sufficient residence time leads to complete detoxification and destruction and is the most environmentally acceptable method for disposal. Incineration at low temperatures could lead to the formation of chlorinated dibenzo-*p*-dioxins. The



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non-persistence and detoxification of 2,4-D in soil indicates that burial in non-crop areas, away from water supplies, would be an acceptable method for the disposal of small quantities of 2,4-D discharge in surface water and sewers should be avoided.

Package product wastes: : Combustible containers should be disposed of in pesticide incinerators or in specified landfill sites. Non-combustible containers must be triple rinsed using the normal diluent at a volume equal to approximately 10% of the drum's capacity. Add the rinsing mixture to the spray mixture or use the recommended disposal methods. Containers must be punctured and disposed of in specified landfill areas.

14.

TRANSPORT INFORMATION:

UN NUMBER : 3082
Packaging group: : III
Class : : 9

15.

REGULATORY INFORMATION:

Symbol : : Xn , Xi
Risk phrases : : **R 22** Harmful if swallowed.
: **R 36/37** Irritating to eyes and respiratory system.

Safety phrases: : **S2** Keep out of reach of children.
: **S13** Keep away from food, drink and animal feeding stuffs
: **S20/21** When using do not eat, drink or smoke.
: **S36/37/39** Wear suitable protective clothing, gloves and eye/face protection.
: **S45** In case of accident or if you feel unwell, seek medical advice immediately (Show the label where possible).

National legislation : : In accordance with the South African National Road Traffic Act, 1996 (Act 93 of 1996), the Fire Brigade Act, 1987 (Act 99 of 1987) and the Occupational Health and Safety Act, 1993 (Act. No. 85 of 1993).

16.

OTHER INFORMATION:

All information and instructions provided in this Material Safety Data Sheet (MSDS) are based on the current state of scientific and technical knowledge at the date indicated on the present MSDS and are presented in good faith and believed to be correct. This information applies to the PRODUCT AS SUCH. In case of new formulations or mixes, it is necessary to ascertain that a new danger will not appear. It is the responsibility of persons in receipt of this MSDS to ensure that the information contained herein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with the product. If the recipient subsequently produces formulations(s) containing this product, it is the recipients sole responsibility to ensure the transfer of all relevant information from this MSDS to their own MSDS.