1. IDENTIFICATION OF COMPANY & PRODUCT

Product Name: 2, 4-D Amine Salt 58% SL
Chemical Name: 2, 2, 4-Dichlorophenoxyacetic acid, Dimethyl amine salt
Brand Name: LURMA
Users: Herbicide
Molecular Formula: C_{10}H_{13}Cl_{2}NO_{3}
Manufacturer: CROP LIFE SCIENCE LTD.
Address: Plot No. 5165, 5166, 5151, G.I.D.C., Ankleshwar-393002
Gujarat, India
Tele Fax Number: 91 2646 238479

2. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Cas #</th>
<th>Percent Or Content(W/W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D Amine Salt</td>
<td>25168-26-7</td>
<td>58.00 %</td>
</tr>
<tr>
<td>Other ingredients</td>
<td>----</td>
<td>Q.S.</td>
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</tbody>
</table>

Chemical characterization: 2,4-D DMA Salt 570 g/L 625 mg/kg 2115 mg/kg 4540 ppm/6H
Hazardous component: 2,4-D DMA Salt 570 g/L 625 mg/kg 2115 mg/kg 4540 ppm/6H

3. HEALTH HAZARDS IDENTIFICATION

EFFECTS OF OVEREXPOSURE ACUTE (SHORT TERM EXPOSURE):

EYE: May cause severe irritation with corneal injury and may result in permanent impairment of vision, even blindness.
SKIN CONTACT: Prolonged exposure may cause skin irritation.
SKIN ABSORPTION: A single prolonged skin exposure may result in the materials being absorbed in harmful amounts.
INGESTION: MAY cause gastrointestinal irritation
INHALATION: Single exposure to vapors is not likely to be hazardous.
ROUTES OF ENTRY: Skin and eye contact, skin absorption, acute inhalation and ingestion Noxious vapors under high temperature conditions.
EFFECTS OF OVEREXPOSURE: May cause loss of appetite, nausea, vomiting, general tenseness and muscular weakness, and prolonged or repeated exposure may lead to liver or kidney damage or central nervous system symptoms.

EXPOSURE LIMITS: For 2, 4-D acid TLV - TWA 10 mg/m3. For dimethyl amine 18 mg/m3.

IRRITANCY OF PRODUCT:
Eyes: marked irritation and corneal injury may occur.

SENSITIZATION OF MATERIAL: Pre-existing skin or respiratory disorders may be aggravated by excessive exposure to this material.

CHRONIC (LONG TERM EXPOSURE): Excessive exposure may cause liver, kidney, gastrointestinal and muscular effects. Signs and symptoms of excessive exposure may be nausea and/or vomiting and abdominal cramps and/or diarrhea. Various animal cancer tests have shown no reliable positive association between 2,4-D exposure and cancer. Epidemiology studies have been both positive and negative with the majority being negative. Birth defects are unlikely. Exposures having no effect on the mother should have no effect on the fetus. Did not cause birth defects in animals; other effects were seen in the fetus only at doses which caused toxic effects to the mother. High dietary levels of 2, 4-D caused toxic effects (weight and viability reduction) in rats on a reproduction test. Has been shown to be negative in some in vitro ("test tube") mutagenicity tests and positive in others. Results of mutagenicity tests in animals have been inconclusive.

GENERAL PRECAUTIONS: Always practice good industrial hygiene; handle with care; avoid personal contact. Do not get into eyes or on skin; do not breathe mist or vapor of product. Do not swallow. Wash hands with soap and water and rinse after handling product. Shower after each shift. Wash all work clothing and completely clean all PPE (personal protective equipment) after each shift.

4. FIRST AID MEASURES

Have the product container or label with you when calling a Poison Control Center or doctor, or going for treatment.

IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses after the first 5 minutes, then continue rinsing eye. Call a Poison Control Center or doctor for treatment advice.
Material safety data sheet
2, 4-D Amine Salt 58% SL

IF ON SKIN: 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.

IF INHALED: Call a Poison Control Center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a Poison Control Center or doctor. Do not give anything by mouth to an unconscious person. Contains petroleum distillate – vomiting may cause aspiration hazard.

PHYSICIAN: (ANTIDOTE) Treat symptomatically and supportively

5. FIRE FIGHTING MEASURES

FLAMMABILITY (Specify Conditions: N/A) FLASH PT °C (method):
EXTINGUISHING MEDIA: Dry chemical, CO2, foam, water spray or fog. Special Fire Fighting Procedures: Self-contained breathing equipment. If water is used, use a soft fog to avoid spreading contamination. Use self-contained breathing apparatus and full protective gear in confined areas of buildings. Contain water to prevent entry into water supplies.

HAZARDOUS COMBUSTION PRODUCTS: Avoid noxious vapors under high temperature conditions. Water based, may boil, and then burn.
UNUSUAL FIRE & EXPLOSION HAZARDS: Prevent water used in firefighting from entering water supplies.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Use personal protective equipment.
Methods for cleaning up: Do not touch spilled material. Stop leak if you can do it without risk. For small spills, take up with sand or other absorbent material and place into containers for later disposal. Move containers from spill area. For larger spills, dike far ahead of spill for later disposal. Keep unnecessary people away. Isolate hazard area and deny entry. Ventilate closed space.

Environmental precautions: Prevent contamination of water.

7. HANDLING AND STORAGE

Handling: precautions Keep product in original tightly closed container; avoid exposure by inhalation; do not get on skin, eyes or clothing; do not eat, drink or smoke when handling; wash hands before eating, drinking or smoking.
Storage: Store in locked, well-ventilated storeroom, away from children and unauthorized personnel, and food and animal feed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Provide local exhaust or general dilution ventilation.
Respiratory protection: Wear a suitable mask.
Hand protection: Wear rubber or plastic gloves.
Eye protection: Wear splash-proof or dust-resistant safety goggles.
Skin and body protection: Wear overalls and closed footwear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Light Brown liquid
Specific Gravity: 1.170 @ 20°C
Boiling Point: > 100°C
Vapor Density (Air=1): 0.021
Density (g/mL): 1.245 at 25°C
Vapor Pressure (mm): 20.7
pH: 7.5 -9
Solubility in Water: Soluble

10. STABILITY AND REACTIVITY

Stability (Conditions to avoid): Stable (excessive heat).
Reactivity & Under What Condition: N/A
Incompatibility (Materials to avoid): Strong oxidizers, acids.
Hazardous Decomposition Products: Ammonia, oxides of nitrogen, chlorine Containing compounds and other unknown hazardous materials may be formed in a fire situation. Incomplete combustion may lead to formation of carbon monoxide and/or other asphyxiants.
11. TOXICOLOGICAL INFORMATION

**ORAL LD50 (Rat)**: 699mg/kg
**DERMAL LD50 (Rabbit)**: >2000mg/kg
**INHALATION LC50 (Rat) (4hrs)**: 1.79mg/kg

**EFFECTS TO EYES**: The concentrate will cause irritation.
**EFFECTS TO SKIN**: Prolonged contacts with the concentrate with skin will results in absorption of some 2, 4-D which can be harmful.

**SKIN SENSITISATION GUINEA PIG** skin sensitizer, may cause irritation under prolonged contacts.

12. ECOLOGICAL INFORMATION

- LC50 (96 h) rainbow trout 100 g/l
- Acute LD50 oral mallard ducks > 10 00 mg/kg
- Bee toxicityLD50 (24 h, oral) 104mg/bee
- Chicken LD50 Oral toxicity > 2000 mg/kg
- Aquatic invertebrates Daphnia magna LC50 (48 h) 184 mg/l.

13. DISPOSAL CONSIDERATIONS

- Pesticide disposal Dispose of waste at an approved disposal facility.
- Container disposal completely empty container into application equipment. This dispose of empty container in a sanitary landfill, or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

14. TRANSPORT INFORMATION

- Not regulated for ground or rail transport. Regulated for Marine Transport only.
- UN No. Class packing group Proper shipping name

**Environmental risk**: UN 3082
- 9
- III.
- If 115L or larger RQ
- ENVIRONMENTALLY
- HAZARDOUS SUBSTANCE
- IMDG Marine pollutant
15. REGULATORY INFORMATION

**Hazard symbol:** The harmful symbol (Xn) The dangerous for the environment symbol (N)

**Risk phrases:**
R20/21/22-Harmful if swallowed

**Safety phrases:**
S2/13 -Keep out of reach of children, Away from food, drink and animal feeding stuffs.

16. OTHER INFORMATION

The information contained in this Material Safety Data Sheet is provided in good faith and is believed to be correct at the date hereof. However, it is expected that individuals receiving the information will exercise their independent judgment in determining its appropriateness for a particular purpose. CLSL makes no representation as to the accuracy or comprehensiveness of the information and to the full extent allowed by law excludes all liability whatsoever, whether with respect to negligence or otherwise, for any loss or damage arising from or connection with the supply or use of the information in this Material Safety Datasheet.