

MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Trade Name: Greengard
Approved Use: Herbicide
Supplier: Barclay Chemicals Manufacturing Ltd.,
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 Ireland.
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Issued By: Barclay Chemicals Ltd.

EMERGENCY TELEPHONE NUMBER: 00-353-1-8112900 (9am to 5pm)
00-353-863857769 (5pm to 9am)

2. COMPOSITION/INFORMATION ON INGREDIENTS

No.	Name
1.	2,4-D ethyl hexyl ester
2.	Triclopyr butoxyethyl ester
3.	Dicamba
4.	Solvent

No.	CAS No.	EC No.	R Phrases	Concentration	Classification
1.	1928-43-4	217-673-3	R22,R43,R50/53	30-40	Xn,N
2.	64700-56-7	----	R22,R41,R52/53	10-15	Xn, N
3.	1918-00-9	217-635-6	R22,R41,R52/53	5-10	Xn
4.	-----	-----	R10,R65,R37,R66,R67,R51/53	5-10	Xn,N

Legend: Tx = Very Toxic, C = Corrosive, Xn = Harmful, Xi = Irritant, Ik = No Classification Required,
 E = Explosive, O = Oxidising, Fx = Extremely Flammable, F = Very Flammable,
 Fo = Flammable, N = Dang. To the Environment, M = Genotoxic, A = Sensitizing, K = Carcinogenic,
 R = Causes birth defects, H = skin absorption

3. HAZARDS IDENTIFICATION

- Human:** : Harmful if swallowed.
Irritating to eyes, respiratory system and skin
Harmful: may cause lung damage if swallowed.
Repeated exposure may cause skin dryness or cracking.
Vapours may cause drowsiness and dizziness. Limited evidence of a carcinogenic effect.
- Environmental:** Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

4. FIRST-AID MEASURES

- General:** Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.
- Inhalation:** Hazardous in the case of inhalation. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
- Skin Contact:** Hazardous in the case of skin contact. Non-sensitizer for skin. Skin inflammation is characterized by itching, scaling, reddening, or occasionally, blistering.
In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
- Eye Contact:** Hazardous in case of eye contact. Non-corrosive to the eyes.
Check for and remove contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.
- Ingestion:** I Ingestion: If swallowed, do NOT induce vomiting. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Aspiration hazard if swallowed – can enter lungs and cause damage. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention.

5. FIRE-FIGHTING MEASURES

- Suitable Extinguishing Media:** SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, auto-ignition or explosion.
- Hazardous Combustion Products:** These products are carbon oxides (CO, CO₂), nitrogen (NO, NO₂), halogenated compounds, hydrogen chloride.

Special Exposure Hazards:	No information
Protective Equipment:	Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear. Be sure to use an approved/certified respirator or equivalent.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:	Splash goggles. Full suit. Vapour respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Methods for Cleaning Up:	Absorb with DRY earth, sand or other non-combustible material. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Neutralize the residue with a dilute solution of sodium carbonate.

7. HANDLING AND STORAGE

Handling:	Keep locked up. Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/vapour/spray. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidising agents.
Storage:	Store in a segregated and approved area. Keep container in a cool, well ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame). Do not store below -10°C (14°F). Packaging materials: Use original container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Standard:	Not available.
Engineering Measures:	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are proximal to the work-station location.
Hygiene Measures:	Wash hands, forearms, and face thoroughly after handling compounds and before eating, smoking, using lavatory, and at the end of day.
Respiratory System:	Vapour respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.
Skin and body:	Lab coat
Hands:	Chemical resistant gloves
Eyes:	Splash goggles

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Brown Liquid
Odour:	Not available
Boiling Point:	The lowest known value is 155 to 181 °C (Solvent)
Melting Point:	< -10 °C
Density:	1.033 g/cm ³ (20 °C)
Vapour Pressure:	The highest known value is 0.06kPa (0.5mm Hg)(at 20 °C) Solvent
Evaporation Rate:	<1 (Solvent)compared to Butyl acetate. (Butyl acetate =1)
PH:	2.67 (Acidic)
Flash Point:	Closed cup: 41 °C
Fire hazards in the presence of various substances:	Flammable in presence of open flames, sparks and static discharge of heat
Auto-ignition temperature:	The lowest known value is .450°C (Solvent)
Lower Explosion Limit:	The greatest known range is, Lower: 0.8%, Upper:7% (Solvent)
Viscosity:	Kinetic. The highest known value is 0.92 cSt (Solvent)

10. STABILITY AND REACTIVITY

Chemical Stability:	This product is stable
Conditions to Avoid:	Heat sources of ignition (Solvent)
Materials to Avoid:	Highly reactive with oxidizing reagents Slightly reactive to reactive with acids, alkalis
Hazardous Decomposition Products:	These products are carbon oxides, nitrogen oxides, halogenated compounds, hydrogen chloride.

11. TOXICOLOGICAL INFORMATION

Ingestion:	Acute oral LD ₅₀ : > 720 mg/kg (Rat) (2,4-D Ethyl Hexyl Ester) Acute dermal LD ₅₀ : >2,000 mg/kg (rabbit) (Solvent)
Skin Irritation:	Hazardous in the case of skin contact (irritant)
Skin Sensitisation:	Non-sensitizer for skin
Eye Irritation:	Hazardous in the case of eye conatact (irritant). Non-corrosive to the eyes.
Inhalation:	No adverse effects anticipated by this route of exposure incidental to proper handling.
Carcinogenicity:	Classified 2 (suspected for human, by European Union (Solvent)
Chronic Toxicity	Repeat exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or more organs.

12. ECOLOGICAL INFORMATION

Aquatic Toxicity:	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
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13. DISPOSAL CONSIDERATIONS

Follow the guidance on the disposal of pesticides as given in the MAFF/HSE "Pesticides: Code of Practice for the Safe Use of Pesticides on Farms and Holdings".

14. TRANSPORT INFORMATION

Special Transport Precautions:	UN 3295, PG III
Road/Rail Classification:	ADR/RID Class: 3 Haz ID: 30 Proper shipping name: Hydrocarbons, liquid, N.O.S (solvent)
Sea Classification:	IMDG Class: 3 Proper shipping name: Hydrocarbons, liquid, N.O.S (solvent)
Air Classification:	IATA –DGR Class: 3 Proper shipping name: Hydrocarbons, liquid, N.O.S (solvent)

15. REGULATORY INFORMATION

Xn

Hazard Symbol : Xn - Harmful

R- PHRASES:

- R10** Flammable
- R22** Harmful if swallowed.
- R36** Irritating to eyes, respiratory system and skin.
- R51/53** Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R65** Harmful: may cause lung damage if swallowed.
Repeated exposure may cause skin dryness or cracking.
Vapours may cause drowsiness and dizziness.

S- PHRASES:

- S2** Keep out of reach of children
- S29/56** Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.
- S36/37/39** Wear suitable protective clothing, gloves and eye/face protection.
- S46** If swallowed, seek medical advice immediately and show this container or label.
- S51** Use only in well ventilated areas.

16. OTHER INFORMATION

Revision 0 Date Prepared: 04/10/06
Revision 1 Date Prepared: 11/12/06 Emergency phone number updated

DISCLAIMER

The information in the MSDS relates to this specific material. If the product is used as a component in any other product, this MSDS may not be valid. The information contained was obtained from sources which we believe are reliable. The information is provided without any warranty, expressed or implied, regarding its correctness.

This Material Safety Data Sheet was prepared according to Directive 2001/58/EC.