



Safety Data Sheet

Report Date 12-Jun-15

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1. Identification

Product Name : CROSSBOW
Synonyms : None
Product Use : Phenoxy Herbicides
Manufacturer/Supplier : Helena Chemical Company
Address : 225 Schilling Blvd. Collierville, TN 38017
General Information : 901-761-0050
Transportation Emergency Number : CHEMTREC:800-424-9300

2. Hazard Identification



Signal Word : Danger
Skin Irritation : Prolonged contact may cause moderate skin irritation.
Eye Irritation : May cause moderate eye irritation.
Acute Toxicity Oral : LD50 1,000 mg/kg (rat) - estimate
Acute Toxicity Dermal : LD50 >5,000 mg/kg (rabbit)

Hazard Categories : Oral Toxicity-4; Eye/Skin Irritation-2A/3; Skin Sensitizer-1B;
Combustible-4; Aspiration-1

Hazard Statement : Harmful if swallowed
Causes serious eye irritation
Causes mild skin irritation
May cause an allergic skin reaction
May be fatal if swallowed and enters airways
Combustible liquid

3. Composition / Information on Ingredients

Component	CAS Number	Weight %
2,4-Dichlorophenoxyacetic acid, butoxyethyl ester	1929-73-3	34.4
Triclopyr-2-butoxyethyl ester	64700-56-7	16.5
Kerosene (petroleum)	8008-20-6	41.5
2-Ethylhexanol	104-76-7	1.9
Inert ingredients	Nonhazardous	5.7

4. First Aid Measures

Eye : Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for further treatment advice.

Skin : Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.

Inhalation : Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.



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- Ingestion** : Call a poison control center or doctor immediately for treatment advice. Rinse mouth with water. Do not induce vomiting. Do not give anything by mouth if unconscious.
- Indication of Immediate Medical Attention and Special Treatment Needed** : Skin contact and repeated excessive exposure may aggravate preexisting conditions. The decision to induce vomiting should be made by a doctor. No specific antidote. Treatment should be directed at control of the symptoms.

5. Fire Fighting Measures

- Extinguishing Media** : Use water fog, fine water spray, dry chemical, carbon dioxide or foam. Alcohol resistant foams are preferred.
- Specific Hazards Arising from the Chemical** : During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Emits nitrogen oxides, hydrogen chloride, carbon monoxide, carbon dioxide, trace amounts of phosgene.
- Special Fire Fight Proc** : Wear positive pressure self-contained breathing apparatus and full protective clothing. Containers may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

6. Accidental Release Measures

- Personal Precautions** : Isolate area. Keep unnecessary and unprotected personnel from entering the area.
- Protective Equipment** : Splashproof goggles or face shield, chemical-resistant gloves, impervious apron and footwear. Use air-purifying respirator with organic vapor cartridge and particulate prefilter, when needed. Eyewash and emergency shower should be available in work area.
- Emergency Procedures** : Keep upwind of spill. Ventilate area. No smoking in spill area.
- Methods and Materials for Containment and Cleanup** : Use non-combustible absorbent, such as sand or Zorball. Scoop or shovel into suitable chemical waste containers for proper disposal. Do not use water for cleanup. Notification to the National Response Center (1-800-424-8802) may be required if spilled into the environment.

7. Handling and Storage

- Precautions for Safe Handling** : Keep out of reach of children. Keep away from heat, sparks and flame. Containers can contain/retain vapors. Do not cut, drill, grind, weld or perform similar operations on or near empty containers. Avoid contact with eyes, skin and clothing. Do not swallow. Avoid breathing vapor or mist. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation.
- Conditions for Safe Storage** : Store in a dry place. Store in original container. Keep container tightly closed when not in use. Do not store near food, foodstuffs, drugs or potable water supplies.

8. Exposure Controls / Personal Protection

- TLV/PEL** : Triclopyr - no TLV or PEL established. Kerosene (petroleum) - 200 mg/m³ (TLV), as total hydrocarbon vapor.
- Appropriate Engineering Controls** : Use engineering controls to maintain airborne levels below exposure limit requirements or guidelines.



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Personal Protective Equipment : Splashproof goggles or face shield, chemical-resistant gloves, impervious apron and footwear. Use air-purifying respirator with organic vapor cartridge and particulate prefilter, when needed. Eyewash and emergency shower should be available

9. Physical and Chemical Properties

Odor/Appearance : Red to brown liquid with sweet odor.
Flash Point, °F : 64 Degrees C.
Boiling Point, °F : >175 Degrees C. (kerosene)
Melting Point(Freezing point), °C : Not applicable
Vapor Pressure, mm Hg @ 20 °C : 0.1 mmHg at 37.8 Deg. C.
Vapor Density : 4.7 (kerosene)
Solubility in Water : Emulsifiable
Molecular Formula : Not applicable, formulated mixture.
Density, g/mL @ 25 °C : 1.0114 at 20 Degrees C.
Evaporation Rate(Butyl Acetate = 1) : No information found
Octanol/Water Partition Coefficient : No information found
pH : 3.8 (10% in water)
Flammable Limits (approximate volume % in air) : No information found
Auto-ignition Temperature : Not determined
Decomposition temperature : No information found

10. Stability and Reactivity

Reactivity : No dangerous reactions known.
Chemical Stability : Stable
Hazardous Decomposition Products : May produce hydrogen chloride, nitrogen oxides, toxic gases, and trace amounts of phosgene.
Hazardous Polymerization : Will not occur
Conditions to Avoid : Elevated temperatures
Incompatible Materials : Avoid acids, bases and oxidizers.

11. Toxicological Information

Acute Toxicity (Oral LD50) : 1,000 mg/kg (rat) (estimated). Harmful if swallowed.
Acute Toxicity (Dermal LD50) : >5,000 mg/kg (rabbit). Not classified as hazardous by dermal absorption.
Acute Toxicity Inhalation LC50 : >5.19 mg/L/4 hour aerosol (rat). Not classified as hazardous by inhalation.
Likely Routes of Exposure : Skin, eyes, inhalation, ingestion
Skin Irritation : Causes mild skin irritation.
Eye Irritation : Causes serious eye irritation.
Skin Sensitization : Skin contact may cause an allergic skin reaction.
Carcinogenic : Kerosene (petroleum) - confirmed animal carcinogen with unknown relevance to humans (ACGIH-A3).
Chronic Effects : Aspiration into the lungs may occur during ingestion or vomiting, causing lung damage or even death due to chemical pneumonia.
Other Hazards : CA Prop 65 Warning: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

12. Ecological Information



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- Ecotoxicity** : 2,4-Dichlorophenoxyacetic acid, butoxyethyl ester - highly toxic to aquatic organisms on an acute basis. Triclopyr-2-butoxyethyl ester - highly toxic to aquatic organisms on an acute basis. Kerosene - slightly toxic to fish, acute basis.
- Persistence and Degradability** : 2,4-D and Triclopyr - chemical degradation (hydrolysis) is expected. Kerosene - biodegradation under aerobic static laboratory conditions is high. 2-Ethylhexanol - readily biodegradable.
- Bioaccumulative Potential** : Bioconcentration potential is high for Kerosene. Bioconcentration potential is moderate for 2,4-Dichlorophenoxyacetic acid, butoxyethyl ester; Triclopyr-2-butoxyethyl ester; 2-Ethylhexanol.
- Mobility in Soil** : Triclopyr-2-butoxyethyl ester - mobility in soil is very high. Kerosene - relatively immobile in soil. 2-Ethylhexanol - mobility in soil is low.
- Other Adverse Effects** : No information found.

13. Disposal Considerations

- Waste Disposal Method** : This material must be disposed of according to Federal, State or Local procedures under the Resource Conservation and Recovery Act.

14. Transport Information

- UN Proper Shipping Name** : Not regulated by DOT in single packages <34.48 gallons.
- Transport Hazard Class** : None
- UN Identification Number** : None
- Packaging Group** : None
- Environmental Hazards** : If shipped by air (IATA) or water (IMDG), ship as: UN3082, Environmentally Hazardous Substance, Liquid, n.o.s., (2,4-D Ester, Triclopyr-2-butoxyethyl ester), 9, PG III, Marine Pollutant
- Transport in Bulk** : If shipped in bulk packages by ground (DOT), ship as: RQ, NA1993, Combustible Liquid, n.o.s., (Kerosene (petroleum)), PG III "ERG # 171"
- Special Precautions for Transportation** : If shipped in single packages \geq 34.48 gallons and <119 gallons, ship as: RQ, UN3082, Environmentally Hazardous Substance, Liquid, n.o.s., (2,4-D Ester), 9, PG III
- Freight Classification** : Pesticides, NOI, Herbicides, Other than Poison (NMFC Item 155050, Sub 11, Class 70)

15. Regulatory Information

National Fire Protection Association Rating :

Health: 1 Fire: 2 Reactivity: 0
Rating Level: (4-Extreme, 3-High, 2-Moderate, 1-Slight, 0-Minimum)

S.A.R.A Title III Hazard Classification (Yes/No) :

Immediate (Acute) Health: Y
Delayed (Chronic) Health: Y
Sudden Release of Pressure: N
Fire: Y
Reactive: N



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FIFRA Information : This Chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labelling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

EPA Registration Number : 62719-290-5905

FIFRA Signal Word : Caution

FIFRA Label Statement : Keep out of reach of children.

FIFRA Label Statement : Harmful if swallowed.

FIFRA Label Statement : Causes moderate eye irritation.

FIFRA Label Statement : Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

FIFRA Label Statement : Avoid contact with eyes or clothing.

FIFRA Label Statement : Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum

FIFRA Label Statement : or using tobacco.

16. Other Information

Data of Preparation/Revision : 12-June-2015