

Riverdale

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Date Issued: 8/27/98

Supersedes: 8/27/98

Product Code: 357

MSDS Number: 357

MATERIAL SAFETY DATA SHEET:

Formula 40

1. INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>CAS #</u>	<u>Weight %</u>	<u>Common Name</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Dimethylamine Salt of 2,4-Dichlorophenoxyacetic Acid	2008-39-1	22.00%	DMA Salt of 2,4-D	10 mg/m ³ (2,4-D Acid)	N/A
Triisopropanolamine Salt of 2,4-Dichlorophenoxyacetic Acid	32341-80-3	34.00%	TIPA Salt of 2,4-D	10 mg/ m ³ (for acid)	10 mg/ m ³ (for acid)
Ethylenediaminetetracetic Acid*, Triisopropanolamine and Sequestering Agent	60-00-4	40.00	N/A	N/A	N/A
	Total	<u>100.00%</u>			

2. HEALTH DATA

PRIMARY ROUTE OF ENTRY:

Dermal/ Eye: Yes Oral: No Inhalation: Yes

SYMPTOMS OF OVEREXPOSURE:

Nonspecific: headache, shortness of breath, loss of appetite or muscle weakness.

ACUTE HEALTH EFFECTS

Inhalation:

Single exposure to vapors is not likely to be hazardous. Excessive inhalation may cause dizziness and irritation of the respiratory tract.

Eyes:

Direct and prolonged eye exposure to the concentrated product may cause severe irritation with corneal injury, which may result in permanent impairment of vision, even blindness.

Skin:

Essentially nonirritating to skin. May cause transient irritation or an allergic reaction in some individuals. A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts.

Ingestion:

Low single dose oral toxicity. May cause muscle weakness, nausea, vomiting, abdominal pain, fall in blood pressure or myotonia (prolonged muscular spasm) if ingested in large quantities.

TOXICOLOGICAL DATA

Acute Oral LD50:

866 mg/ kg, males; 1058 mg/kg ,females (rats)

Acute Dermal LD50:

> 2000 mg/ kg (rabbits)

Acute Inhalation LC50:

> 8.2 mg/ L (rats)

Eye Irritation:

severe irritation

Dermal Irritation:

essentially nonirritating

Dermal Sensitization:

not a sensitizer

Skin exposure may aggravate existing skin conditions. Exposure to mist may aggravate existing respiratory conditions.

CHRONIC HEALTH EFFECTS:

Agency Listing	Carcinogen	
<u>NTP</u>	<u>IARC</u>	<u>OSHA</u>
No	No	No

Repeated or prolonged overexposure to phenoxy herbicides may cause liver, kidney, gastrointestinal or muscular system effects. The EPA's Science Advisory Panel has given 2,4-D a class D classification (not classifiable as to human carcinogenicity). Various epidemiological studies have yielded conflicting results with the majority being negative. The current scientific consensus is that there is no proven causal association between 2,4-D and cancer. Excessive dietary levels of 2,4-D have caused decreased weight and survival in offspring in a rat reproduction study. TIPA 2,4-D caused birth defects in laboratory animals only at doses toxic to the mother (severe maternal toxicity). In vitro mutagenicity studies were negative in some cases and positive in others. Animal mutagenicity studies were predominantly negative.

3. FIRST AID MEASURES

EYE CONTACT:	Immediate and continuous irrigation with flowing water for at least 30 minutes is imperative. Prompt medical consultation is essential.
INHALATION:	Remove victim to fresh air. Get medical attention if cough or respiratory symptoms develop.
INGESTION:	Call a physician or Poison Control Center. Do not induce vomiting unless directed to do so by a medical personnel.
SKIN CONTACT:	Wash exposed skin gently with soap and water.
NOTE TO PHYSICIAN:	No specific antidote. Treat symptomatically.

4. FIRE FIGHTING MEASURES

FLASH POINT (F):	191
FLASH POINT METHOD USED:	Tag Closed Cup
EXTINGUISHING MEDIA:	Use CO2 or dry chemical for small fires and water fog or foam for large fires. Use water spray to cool closed containers.
COMBUSTION PRODUCTS:	May include, but are not limited to: hydrogen chloride and nitrogen oxides.
SPECIAL FIRE FIGHTING PROCEDURES:	May produce toxic and noxious fumes under extreme fire conditions. Use positive pressure self-contained breathing apparatus and acid resistant protective clothing. Any water used to extinguish the fire should be contained by diking to prevent contamination of the public water system.
UNUSUAL FIRE & EXPLOSION HAZARDS:	When heated above the flash point this material emits flammable vapors which, when mixed with air, can burn or be explosive. Fine mist or spray may be flammable at temperatures below the flash point. See Section 13, REGULATORY INFORMATION, for NFPA ratings.

5. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS SPILLED OR RELEASED:

Wear the suggested safety equipment when cleaning large spills (section 7). Surround with impervious material such as dirt to prevent run-off. Absorb product with an inert absorbent such as clay granules or wood shavings. Contain all affected material in a closed, marked container for proper disposal. 2,4-D spills are subject to CERCLA (Superfund) reporting requirements. Reportable Quantity (RQ) = 26.3 gallons of Formula 40.

6. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Keep out of reach of children. Avoid contact with eyes, skin, and clothing. Do not store below temperature of 40 F (7 C). If frozen, warm to 80 - 90 F (27 - 32 C) and redissolve before using by rolling or shaking container. Store in original container and in a cool, dry place. Keep container tightly closed when not in use. Reduce stacking height where local condition can effect packaging strength.

WORK HYGIENIC PRACTICE:

Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing immediately if pesticide gets inside.

7. EXPOSURE CONTROL/PERSONAL PROTECTION

	Wear a NIOSH/MSHA approved organic vapor respirator when exposed to mist or atmospheric levels above the exposure guideline (10 mg/m3).
VENTILATION:	Open ventilation. Reduce all mist with local exhaust.
PROTECTIVE GLOVES:	Chemical-resistant gloves
EYE PROTECTION:	Chemical splash goggles
OTHER PROTECTIVE EQUIPMENT:	Long sleeved shirt, long pants, socks and shoes are recommended.

8. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR:	Amber liquid. Phenolic odor.
SOLUBILITY IN WATER:	Infinite in water
BOILING POINT (F):	>212
VAPOR PRESSURE (mm Hg @ 20 C):	< 1 x 10 ⁻⁷ (non-volatile)
SPECIFIC GRAVITY (H₂O = 1):	1.18 - 1.25
pH:	N/A
FREEZING POINT (F):	40
POUNDS PER GALLON:	10.12

9. STABILITY AND REACTIVITY

STABILITY:	Stable
CONDITIONS TO AVOID:	Avoid temperatures near or above the flash point.
INCOMPATIBILITY:	Strong oxidizers and bases
HAZARDOUS BYPRODUCTS:	None known Will Not Occur

10. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE:

2,4-D has a relatively short half-life (on average 6-9 days in soil, 6-7 in grass) and is readily degraded into nontoxicological substances by soil microbes and aquatic microorganisms. Research has shown that 2,4-D does not bioaccumulate to any significant degree in mammals or in other organisms.

ECOTOXICITY:

This product is toxic to aquatic invertebrates. Drift or runoff may adversely affect aquatic invertebrates and nontarget plants.

11. DISPOSAL CONSIDERATIONS

PRODUCT DISPOSAL:

Pesticide wastes are toxic. Improper disposal of excess pesticide spray mixtures or rinsate is a violation of Federal law and may contaminate groundwater. If product cannot be disposed of by use according to the label, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL:

Triple rinse (or equivalent), adding rinsate to spray tank. Then offer for recycling, or puncture and dispose of in a sanitary landfill. Plastic containers are also disposable by incineration, or if allowed by State and local authorities, by burning. If burned, stay out of smoke.

12. TRANSPORTATION INFORMATION

DOT REGULATED CONTAINER SIZE:	30 gal, 55 gal, 220 gal, 260 gal (All smaller container sizes are not DOT regulated)
HAZARD CLASS:	9
UN NUMBER:	UN 3082
PACKING GROUP:	III
GUIDE NUMBER:	171
PROPER SHIPPING NAME:	RQ Environmentally Hazardous Substances, Liquid, N.O.S. (2,4-D Salt)

13. REGULATORY INFORMATION

SARA TITLE III; Section 311/312:

An immediate and delayed health hazard. A fire hazard.

REPORTABLE QUANTITY (RQ):

100 lbs of 2,4-D acid equivalent or approximately 26.3 gallons of Formula 40.

SARA TITLE III; Section 313- This product contains the following substances subject to the reporting requirements of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

N/A

HMIS INFORMATION	
HEALTH:	3
FLAMMABILITY:	2
REACTIVITY:	0
PROTECTIVE:	H

NFPA INFORMATION	
TOXICITY:	3
FIRE:	2
REACTIVITY:	0
SPECIAL:	N

The information given herein is to the best of our knowledge true and accurate. No warranty, however, expressed or implied, is made.