VAN DIEST SUPPLY COMPANY

Distributor and Manufacturer of Agricultural Chemicals

SAFETY DATA SHEET

1. IDENTIFICATION

1.1 GHS PRODUCT IDENTIFIER:	**CORNBELT® LOVOL ESTER (4LB. AND 6LB.)**
1.2 ALTERNATE NAME(S):	None
1.3 CHEMICAL CLASS:	Agricultural Herbicide
1.4 ACTIVE INGREDIENT(S):	2,4-Dichlorophenoxyacetic Acid, 2-Ethylhexyl Ester
1.5 RECOMMENDED USE/RESTRICTIONS:	Please see the label for specific recommendations regarding this product.
1.6 SUPPLIER'S DETAILS:	Van Diest Supply Company 1434 220th Street Post Office Box 610 Webster City, IA 50595-0610
1.7 EMERGENCY PHONE NUMBER:	FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE, OR ACCIDENT - CALL CHEMTREC - DAY OR NIGHT - 1-800-424-9300

2. HAZARDS IDENTIFICATION

2.1 HEALTH HAZARDS:	Skin Sensitization	Category 1
	Acute Toxicity	Category 4 - Oral

2.2 LABEL ELEMENTS:

WARNING

HAZARDS:

Harmful if swallowed.

May cause an allergic skin reaction.

PREVENTION:

Avoid breathing dust/fume/gas/mist/vapors/spray.

Wash skin thoroughly after handling.

Do not eat, drink, or smoke when using this product.

Contaminated work clothing should not be allowed out of the workplace.

Wear protective gloves.

RESPONSE:

IF SWALLOWED: Call a poison center or doctor/physician if you feel unwell. Rinse mouth.

IF ON SKIN: Wash with plenty of soap and water.

IF SKIN IRRITATION OR RASH OCCURS: Get medical advice/attention.

Wash contaminated clothing before reuse.

DISPOSAL:

Dispose of contents and container in accordance with federal, state, and local regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS

MATERIAL	COMMON NAME/SYNONYMS	CAS #	% IN FORMULATION
2,4-Dichlorophenoxyacetic Acid, 2-Ethylhexyl Ester	Esters of 2,4-D	1928-43-4	87.70%
Inert Ingredients	N/A	N/A	12.30%

This Safety Data Sheet is not a guarantee of product specification. Specific ingredient content may be found on the product label.

4. FIRST AID MEASURES

4.1 GENERAL FIRST AID MEASURES:

EYE CONTACT:	Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice. A suitable emergency eye wash facility should be available in the work area.
SKIN CONTACT:	Take off contaminated clothing. Wash skin with soap and plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Wash clothing before reuse. Shoes and other leather items which cannot be decontaminated should be disposed of properly. A suitable emergency safety shower facility should be available in the work area.
INGESTION:	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 the poison control center or doctor. Never give anything by mouth to an unconscious person.
INHALATION:	Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth-to-mouth, use rescuer protection (pocket mask, etc.). Call a poison control center for treatment advice.

4.2 MOST IMPORTANT SYMPTOMS/EFFECTS (ACUTE AND DELAYED):

Aside from the information found under description of first aid measures (above) and indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11 - Toxicology Information.

4.3 INDICATION OF NEED FOR IMMEDIATE MEDICAL ATTENTION:

Notes to physician: Skin contact may aggravate preexisting dermatitis. If burn is present, treat as any thermal burn (after decontamination). No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

5. FIREFIGHTING MEASURES

5.1 SUITABLE EXTINGUISHING MEDIA:

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. General purpose synthetic foams (including AFFF type) or protein foams are preferred if available. Alcohol resistant foams (ATC type) may function. Water fog, applied gently, may be used as a blanket for fire extinguishment.

5.2 UNSUITABLE EXTINGUISHING MEDIA:

Do not use direct water stream. May spread fire.

5.3 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. Combustion products may include and are not limited to: hydrogen chloride, carbon monoxide, and/or carbon dioxide.

5. FIREFIGHTING MEASURES, continued

5.4 SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS:

Container 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. Dense smoke is produced when product burns. Keep people away. Isolate fire and deny unnecessary entry. Consider feasibility of a controlled burn to minimize environment damage. Use water spray to cool fire-exposed containers and fire-affected zone until fire is out and danger of reignition has passed. Fight fire from a protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from a venting safety device or discoloration of the container. Do not use direct water stream - it may spread fire. Move container from fire area if possible without hazard.

6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT, AND EMERGENCY PROCEDURES:

Isolate area. Use appropriate safety equipment. For additional information, refer to Section 8 - Exposure Control/Personal Protection.

6.2 METHODS AND MATERIAL FOR CONTAINMENT AND CLEANUP:

Prevent from entering into soil, ditches, sewers, waterways, and/or groundwater. See Section 12 - Ecological Information. Spills or discharge to natural waterways is likely to kill aquatic organisms. Contain spilled materials if possible.

For spills, absorb with materials such as: clay, dirt, and/or sand. Sweep up. Collect in suitable and properly labeled containers.

See Section 13 - Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

7.1 CONDITIONS FOR SAFE HANDLING:

KEEP OUT OF REACH OF CHILDREN. Avoid prolonged or repeated contact with skin. Avoid contact with eyes, skin, and clothing. Do not swallow. Avoid breathing vapor or mist. Wash thoroughly after handling. Use with adequate ventilation. See Section 8 - Exposure Controls/Personal Protection.

7.2 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, and/or potable water supplies.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

8.1 OCCUPATIONAL EXPOSURE LIMITS:

MATERIAL	CAS #	OSHA PEL	ACGIH TLV	CARCINOGEN	
				NTP	No
2,4-Dichlorophenoxyacetic Acid, 2-Ethylhexyl Ester	1928-43-4	NE	10 mg/m^3	IARC	No
				OSHA	No

8.2 ENGINEERING CONTROLS:

Use local exhaust ventilation or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations. A suitable emergency eyewash/safety shower facility should be available in the work area.

8.3 PERSONAL PROTECTIVE EQUIPMENT:

The following recommendations are suitable for small, incidental contact with this material. Recommendations for commercial or on-farm application of this chemical may be found on the container label.

EYE CONTACT:	If splashing can be reasonably anticipated, for instance while pouring the product into another container, wear chemical splash goggles.
SKIN CONTACT:	Where skin contact is possible, wear a suitable barrier such as chemical resistant gloves and chemical apron. Preferred glove materials include: butyl rubber, nitrile, polyethylene, and/or PVC.

8. EXPOSURE CONTROL/PERSONAL PROTECTION, continued

INGESTION:	Do not allow eating, drinking, tobacco use, and/or cosmetic application in areas where there is a potential for exposure to this material.
INHALATION:	Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. The following should be effective types of air-purifying respirators: organic vapor cartridge with a particulate pre-filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Yellow to brown liquid
ODOR:	Mild phenolic
ODOR THRESHOLD:	ND
pH:	ND
MELTING POINT:	N/A
BOILING POINT:	>392°F Decomposition
FLASH POINT:	188°F
EVAPORATION RATE:	ND
FLAMMABILITY:	N/A
UPPER/LOWER EXLOSIVE LIMIT:	ND
VAPOR PRESSURE:	4.8 hPa at 77°F
VAPOR DENSITY:	ND
RELATIVE DENSITY:	1.15 at 68°F
SOLUBILITY:	0.0867 at 77°F
PARTITION COEFFICIENT (*n* -Octanol/Water):	Log P_{OW}: 0.83
AUTO-IGNITION TEMPERATURE:	ND
DECOMPOSITION TEMPERATURE:	>392°F
VISCOSITY:	ND

ND: No Data; N/A: Not Applicable

10. STABILITY AND REACTIVITY

10.1 REACTIVITY:

No data.

10.2 CHEMICAL STABILITY:

Stable under recommended storage conditions.

10.3 POSSIBILITY OF HAZARDOUS REACTIONS:

Will not occur.

10.4 CONDITIONS TO AVOID:

Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems. Pressure build-up can be rapid.

10.5 INCOMPATIBLE MATERIALS:

Strong oxidizers, strong acids, strong bases

10.6 HAZARDOUS DECOMPOSITION PRODUCTS:

Thermal decomposition products include: carbon monoxide, carbon dioxide, hydrogen chloride.

11. TOXICOLOGICAL INFORMATION

11.1 LIKELY ROUTES OF EXPOSURE:

Overexposure may occur by inhalation, ingestion, and/or absorption.

11. TOXICOLOGICAL INFORMATION, continued

11.2 SKIN CORROSION/IRRITATION:

Prolonged contact is essentially nonirritating to skin. Repeated contact may cause skin irritation with local redness. May cause drying and flaking of the skin.

11.3 SERIOUS EYE DAMAGE/IRRITATION:

May cause slight temporary eye irritation. Corneal injury is unlikely.

11.4 RESPIRATORY OR SKIN SENSITIZATION:

Has caused allergic skin reactions when tested in guinea pigs.

11.5 GERM CELL MUTAGENICITY:

This material is not suspected of being mutagenic.

11.6 CARCINOGENICITY:

Did not cause cancer in laboratory animals.

11.7 REPRODUCTIVE TOXICITY:

Has been toxic to the fetus in laboratory animal tests. There is no evidence that these findings are relevant to humans. Did not cause birth defects in laboratory animals.

11.8 STOT-SINGLE EXPOSURE:

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

11.9 STOT-LONG TERM EXPOSURE:

Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

11.10 ASPIRATION HAZARD:

Based on available information, aspiration hazard could not be determined.

11.11 ACUTE TOXICOLOGY:

INGESTION:	**ORAL LD_{50}**
	896 mg/kg
SKIN CONTACT:	**DERMAL LD_{50}**
	>2,000 mg/kg
INHALATION:	**INHALATION LC_{50} (DUST/MIST)**
	5.39 mg/L

12. ECOLOGICAL INFORMATION

12.1 ECOTOXICITY - ACUTE TOXICITY TO FISH:

	SPECIES	RESULTS
LC_{50}	Tidewater silverside (*Menidia beryllina)*	Flow-through test, 96 hour, >1.9 mg/L, OECD Test Guideline 203 or Equivalent
	Rainbow trout (*Oncorhynchus mykiss*)	96 hour, >5.0 mg/L, OECD Test Guideline 203 or Equivalent

Material is highly toxic to aquatic organisms on an acute basis (LC_{50}/EC_{50} between 0.1 and 1 mg/L in the most sensitive species tested).

12.2 ECOTOXICITY - ACUTE TOXICITY TO AQUATIC INVERTEBRATES:

	SPECIES	RESULTS
EC_{50}	Water flea (*Daphnia magna*)	Static test, 96 hour, >5.0 mg/L, OECD Test Guideline 202 or Equivalent

12.3 ECOTOXICITY - ACUTE TOXICITY TO ALGAE/AQUATIC PLANTS:

As the ester active substance:

	SPECIES	RESULTS
EbC_{50}	*Skeletonema costatum*	Static test, 5 day, Biomass, 0.23 mg/L, OECO Test Guideline 201 or Equivalent

12.4 ECOTOXICITY - CHRONIC TOXICITY TO FISH:

	SPECIES	RESULTS
NOEC	Fathead minnow (*Pimephales promelas)*	Flow-through test, 32 day, 0.12 mg/L

12. ECOLOGICAL INFORMATION, continued

12.5 ECOTOXICITY - CHRONIC TOXICITY TO AQUATIC INVERTEBRATES:

	SPECIES	RESULTS
NOEC	Water flea (*Daphnia magna*)	Flow-through test, 21 day, weight, 0.015 mg/L

12.6 ECOTOXICITY - TOXICITY TO ABOVE GROUND ORGANISMS:

Material is slightly toxic to birds on an acute basis (LC_{50} between 501 and 2,000 mg/kg). Material is practically non-toxic to birds on a dietary basis (LC_{50} >5,000 ppm).

12.7 PERSISTENCE AND DEGRADABILITY:

Biodegradation under aerobic laboratory conditions is below detectable limits ($_{80}D_{20}$ or BOD_{28}/ThOD <2.5%).

Biodegradation may occur under aerobic conditions (in the presence of oxygen).

10-day Window: Fail Biodegradation: 77% Exposure time: 29 day

12.8 BIOACCUMULATIVE POTENTIAL:

For similar active ingredient (2,4-Dichlorophenoxyacetic acid), bioconcentration potential is low (BCF <100 or Log P_{OW} <3).

12.9 MOBILITY IN SOIL:

Expected to be relatively immobile in soil (K_{OC} <5,000).

13. DISPOSAL CONSIDERATIONS

Disposal methods: If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national, and local laws.

14. TRANSPORT INFORMATION

14.1 DOT CLASSIFICATION:

The material is classified as follows, when shipped in containers at or above the regulated container size:

PROPER SHIPPING NAME:	RQ, Environmentally Hazardous Substance, Liquid, N.O.S. (Contains 2,4-D Ester), 9, UN3082, PG III, ERG#171
TRANSPORT HAZARD CLASS:	Class 9
UN NUMBER:	UN3082
PACKING GROUP:	III

15. REGULATORY INFORMATION

15.1 EPCRA SARA TITLE III CLASSIFICATIONS:

SECTION 311/312 HAZARD CLASSES:	Fire, Acute Health Hazard, Chronic Health Hazard
SECTION 313 TOXIC CHEMICALS:	Component: 2,4-D 2-Ethylhexyl Ester CAS# 1928-43-4

15.2 CERCLA/SARA 302 REPORTABLE QUANTITY:

106lbs.

16. OTHER INFORMATION

SDS VERSION: 1/10/2018

NFPA 2, 2, 0

The information and recommendations contained in this Safety Data Sheet are understood to be correct by Van Diest Supply Company. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. Information in this SDS follows different criteria from, and serves a different purpose than the product labeling.