

DREXEL DE-ESTER® LV4

SECTION 1: MATERIAL IDENTIFICATION

Product Name: Drexel De-Ester® LV4
EPA Reg. No.: 19713-345
Product Usage: Herbicide

Manufacturer: Drexel Chemical Company
Address: 1700 Channel Avenue
 PO Box 13327
 Memphis, Tennessee, 38113-0327, USA
 901-774-4370

Emergency Telephone Numbers: CHEMTREC 800-424-9300
 DREXEL CHEMICAL COMPANY 901-774-4370

This product is an EPA FIFRA registered pesticide. Some of the classifications on this SDS are not the same as the FIFRA label. Certain sections of this SDS are superseded by federal law governed by EPA for a registered pesticide. Refer to SECTION 15: REGULATORY INFORMATION for explanation.

SECTION 2: HAZARD(S) IDENTIFICATION

(As defined by the OSHA Hazard Communication Standard, 29)

Signal Word:

WARNING



Classifications:

Hazard Class:

Toxicity Study:

Acute Toxicity, Oral
 Acute Toxicity, Dermal
 Acute Toxicity, Inhalation
 Skin corrosion/ irritation
 Serious eye damage / irritation
 Specific Target Organs: Single
 Specific Target Organs: Repeated
 Aspiration Liquids
 Hazard to Aquatic Environment, short term (Acute)
 Hazard to Aquatic Environment, long-term (Chronic)

Category:

Category 4
 Category 4
 Category 4
 Category 2
 Category 2B
 Category 3
 Category 2
 Category 1
 Category 1
 Category 2

Hazard Statements:

H Code:

Statement:

| | |
|------|--|
| H302 | Harmful if swallowed |
| H312 | Harmful in contact with skin |
| H332 | Harmful if inhaled |
| H315 | Causes skin irritation |
| H320 | Causes eye irritation |
| H335 | May cause respiratory irritation |
| H373 | May cause damage to organs (liver, kidneys) through prolonged or repeated exposure |
| H304 | May be fatal if swallowed and enters airways |
| H400 | Very toxic to aquatic life |
| H411 | Toxic to aquatic life with long lasting effects |

HNOC (Hazard not otherwise classified): None available / Not applicable

Prevention:

Precautionary Statements:

Statement:

If medical advice is needed, have product container or label at hand.
 Keep out of reach of children.
 Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Avoid breathing dust/fume/gas/mist/vapors/spray.
 Do not get in eyes, on skin, or on clothing.
 Wash face, hands and any exposed skin thoroughly after handling.
 Do not eat, drink or smoke when using this product.
 Use only outdoors or in a well-ventilated area.
 Avoid release into the environment.
 Wear protective gloves/protective clothing/eye protection/face protection.
 Use personal protective equipment as required.
 In case of inadequate ventilation, wear respiratory protection.

Response:

If in Eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. Get immediate medical advice/attention.
If Swallowed: Call a POISON CENTER or doctor/physician if you feel unwell. Treat symptomatically.
If Inhaled: Remove person to fresh air and keep comfortable for breathing. Call POISON CENTER or doctor if you feel unwell.
If on Skin or Clothing: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.
If exposed or concerned: None available, get medical attention.

Material released or spilled: Collect spillage

Storage: Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in a cool, dry, and secure area designated specifically for pesticides and away from heat sources. Always use oldest stock first.

Disposal: Dispose of contents/container in accordance with your local or area regulatory authorities.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

| <u>Chemical Name:</u> | <u>Synonym:</u> | <u>CAS No.:</u> | <u>EC No.:</u> | <u>RTECS:</u> | <u>% By Wt.:</u> |
|--|---|-----------------|----------------|---------------|------------------|
| Active Ingredient: 2,4-Dichlorophenoxyacetic acid, 2-ethylhexyl ester* | Isooctyl ester of 2,4-Dichlorophenoxyacetic acid; 2,4-D ethylhexyl ester; 2,4-D 2EHE; 2,4-Dichlorophenoxyacetic acid, Isooctyl (2-ethylhexyl ester) | 1928-43-4 | 217-673-3 | AG8525000 | 65.4 % |
| Inert Ingredients: | N/A | N/A | N/A | N/A | 34.6 % |

* Equivalent to 43.4% 2,4-D acid CAS No.: 94-75-7

SECTION 4: FIRST-AID MEASURES

Have the product container, label and / or Safety Data Sheets (SDS) with you when calling a poison control center or doctor or going for treatment. You may also call CHEMTREC at 800-424-9300 for emergency medical treatment information.

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

| | |
|---|---|
| If Swallowed: | 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. |
| Skin/Clothing Contact: | 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. |
| If Inhaled: | 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. |
| Indication of Medical Attention and Special Treatment Needed: | Treat symptomatically. If medical advice is needed, have product container or label at hand. |
| Note to Physician / Important Symptoms/ Effects, Acute and or Delayed: | Contains petroleum distillate. Vomiting may cause aspiration pneumonia. If swallowed, stomach contents should be evacuated quickly in a manner which avoids aspiration. Otherwise, treatment should be directed at the control of symptoms and clinical condition. |

SECTION 5: FIRE FIGHTING MEASURES

| | |
|---|--|
| Fire Fighting Media: | Dry chemical, CO ₂ , Foam, Water mist or fog. |
| Fire Fighting Procedures: | Keep people away. Isolate fire and deny unnecessary entry. Consider feasibility of a controlled burn to minimize environment damage. Foam fire extinguishing system is preferred because uncontrolled water can spread possible contamination. If water is used, use a fine water or fog to avoid contamination. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of re-ignition has passed. Fight fire from 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 venting safety device or discoloration of the container. Hand held dry chemical or carbon dioxide extinguishers may be used for small fires. Move container from fire area if this is possible without hazard. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this SDS. Dike and collect fire-extinguishing water to prevent environmental damage and excessive waste runoff. Contact your State Pesticide or Environmental Control Agency, or nearest EPA Regional Office for guidance on disposal. |
| Special Protective Equipment for Firefighters: | Wear positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots, and gloves). Use full face shield and operate in positive pressure mode. Avoid contact with this material during firefighting operations. If contact is likely, change to full chemical resistant firefighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections Unusual Fire and Explosion Hazards: Container may rupture from gas/vapor generation in a fire situation. Dense smoke is produced when product burns. |
| Specific Fire Hazards: | Flammability classification (OSHA 29 CFR 1910.1200): N/Av Flash point: > 200°F Lower flammable limit (% by volume): N/Av Upper flammable limit (% by volume): N/Av |
| Hazardous Combustion Products: | 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 trace amounts of: Carbon monoxide, Carbon dioxide as well as other asphyxiates. |

National Fire Protection Association:

| | | | | | |
|---|---------------|-------------|-------------------|----------|-----------------|
| NFPA:  | Health | Fire | Reactivity | | |
| | 2 | 1 | 0 | | |
| Ratings: | 4-Extreme | 3-High | 2-Moderate | 1-Slight | 0-Insignificant |

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions:

Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to SECTION 7: HANDLING AND STORAGE, for additional precautionary measures. Ventilate area of leak or spill. Use appropriate safety equipment. For additional information, refer to SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION.

Environmental Precautions:

Do not flush into surface water or sanitary sewer system. Prevent from entering soil, ditches, sewers, waterways and/or groundwater. Refer to SECTION 12: ECOLOGICAL INFORMATION.

Steps to be taken if Material is Released or Spilled:

Control the spill at its source.

Small spills: Stop the flow of material, if this is without risk. Apply suitable absorbent and sweep up. Collect in suitable and properly labeled containers. Should be damped-off and pumped into containers. Soak up remainder with absorbent material and dispose of in accordance with local regulations. Prevent entry into waterways, sewers, basements or confined areas.

Large spills: Stop the flow of material, if this is without risk. Apply suitable absorbent and sweep up. Collect in suitable and properly labeled containers. Should be damped-off and pumped into containers. Soak up remainder with absorbent material and dispose of in accordance with local regulations. Prevent entry into waterways, sewers, basements or confined areas. Contact Drexel Chemical Company for clean-up assistance. Refer to SECTION 13: DISPOSAL CONSIDERATIONS, for additional information. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7: HANDLING AND STORAGE

KEEP OUT OF REACH OF CHILDREN

Handling: **General Handling:** Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Do not swallow. Avoid breathing dust. Avoid breathing vapors. Do not eat, drink or smoke when using this product. Use with adequate ventilation. Wear chemical protective equipment when handling. Wear long-sleeved shirt, long pants and shoes with socks when handling. Keep away from heat, sparks and flame. Do not reuse this container. Refer to SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION.

Storage: Store in a cool, dry, ventilated and secure area designated specifically for pesticides and away from heat sources. Keep in original containers and keep containers closed when not in use. Do not store in excessive heat. Keep away from unauthorized access. Do not store below 45°F (7°C). If frozen or crystallized, slowly warm to 80 to 90°F and re-dissolve by rolling or shaking container before use. Do not store near children, food, foodstuffs, drugs or potable water supplies. Always use oldest stock first.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits:

| Components: | OSHA PEL | ACGIH TLV | OTHER |
|--|----------------------|----------------------|-------|
| 2,4-Dichlorophenoxyacetic acid, 2-ethylhexyl ester | 10 mg/m ³ | 10 mg/m ³ | N/A |

THIS SECTION IS FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD REFER TO THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

Engineering Controls:

Ventilation: Investigate engineering techniques to reduce exposures. When handling this product proper ventilation is required to maintain exposure below the TLV. Ventilate all transport vehicles prior to unloading. Facilities storing or utilizing this material should be equipped with an eyewash facility / station and safety shower. Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

Personal Protection:

- Eye/Face Protection:** Eye contact should be avoided through the use of chemical safety glasses, goggles, or a face shield selected in regard to exposure potential. Wear chemical splash goggles to prevent vapors or mists from entering the eyes. Where there is potential for eye contact have eye flushing equipment available. Safety glasses with side-shields.
- Ingestion:** Avoid ingestion of even very small amounts; do not consume or store food or tobacco in the work area; wash hands and face thoroughly with soap and water before smoking or eating. Avoid getting wash water in eyes.
- Hand Protection:** Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Neoprene, Nitrile/butadiene rubber (“nitrile” or “NBR”) or Viton, Polyvinyl chloride (“PVC” or “vinyl”). The selection of gloves for a particular application and duration of use in the workplace should also be taken into account all relevant workplace factors such as, but not limited to: other chemicals which may be handled, physical requirements (cut/ puncture protection, dexterity, thermal protection), potential body reactions to gloves materials, as well as the instructions / specs provided by the supplier of gloves.
- Skin Protection:** Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task. Safety shower should be located in immediate work area. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly. Items which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and disposed of properly.
- Respiratory Protection:** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use an approved respirator. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material. When handling in enclosed areas, when large quantities of dusts are generated or prolonged exposure is possible in excess of the TLV, use a respirator with either an organic vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C) or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G). For emergency conditions, use an approved positive-pressure self-contained breathing apparatus. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

| Property | Reported Value |
|--------------------|-----------------------------------|
| Physical State | Liquid (Emulsifiable Concentrate) |
| Appearance / Color | Slight amber to Yellow brown |
| Odor | Mild to pungent odor |
| Odor threshold | No data available |
| pH | 3.0 – 4.0 |
| Melting point | No data available |

| | |
|---|-------------------|
| Freezing point | No data available |
| Boiling point | >315°C |
| Flash point | >100°C |
| Evaporation rate | No data available |
| Flammability | No data available |
| Lower flammability/explosive limits (LEL) | No data available |
| Upper flammability/explosive limits (UEL) | No data available |
| Vapor pressure | No data available |
| Vapor density | No data available |
| Relative density | 8.66 lbs. / gal. |
| Solubility in water | Emulsifies |
| Solubility in organic solvents | No data available |
| Partition coefficient (n-octanol/water) | No data available |
| Auto-ignition temperature | No data available |
| Decomposition temperature | No data available |
| Viscosity | 70 cP |
| Explosive properties | No data available |
| Oxidizing properties | No data available |
| Dissociation Constant | No data available |
| % Volatiles | No data available |

Property Note: The physical properties and reported values are typical values based on materials tested but may vary from sample to sample. Thus, typical values should not be construed as a guaranteed analysis of any specific lot/ batch or specification items.

SECTION 10: STABILITY AND REACTIVITY

| | |
|--|--|
| Reactivity: | Thermally stable at typical use temperatures and in closed containers. |
| Chemical Stability: | Stable under recommended storage conditions. |
| Hazardous Polymerization: | Will not occur. |
| Conditions to Avoid: | Avoid heat of open flame. Avoid temperatures above 150°C (302°F). Keep away from strong acids. |
| Incompatible Materials: | Avoid contact with: Strong acids. Strong bases. Strong oxidizers. |
| Hazardous Decomposition Products: | Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Carbon monoxide, Carbon dioxide, Chlorine-containing compounds. |

SECTION 11: TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

| | | |
|---|--|---|
| Potential routes of exposure/potential health effects: | Skin contact, Eye contact, Ingestion, Inhalation | |
| Acute Oral: | LD₅₀ (Rat): | >1,000 mg/kg |
| Acute Dermal: | LD₅₀ (Rat): | >2,000 mg/kg |
| Acute Inhalation: | LC₅₀ (Rat): | Aerosol, Rat >3.0 mg/L |
| Eye Irritation: | (Rabbit): | Slight irritation |
| Skin Irritation: | (Rabbit): | None to Slight irritation |
| Skin Sensitization: | (Guinea Pig): | Non-sensitizer. Did not cause allergic skin reactions when tested in guinea pigs. |

Chronic Toxicity: Various animal cancer tests have shown no reliably positive association between 2,4-D exposure and cancer. Epidemiology studies on herbicide use have been both positive and negative with the majority being negative.

| | |
|---|--|
| Carcinogenicity: | Various animal cancer tests have shown no reliably positive association between 2,4-D exposure and cancer. Epidemiology studies on herbicide use have been both positive and negative with the majority being negative. IARC Listed as possible carcinogen Class 2B ACGIH Not classifiable as a human carcinogen NTP Not classifiable as a human carcinogen OSHA No data available |
| Genotoxicity: | In vitro genetic toxicity studies were predominantly negative. Animal genetic toxicity studies were predominantly negative. |
| Mutagenicity: | No data available |
| Teratogenicity: | No data available |
| Reproductive Toxicity: | In laboratory animals, excessive doses toxic to the parent animals caused decreased weight and survival of offspring. |
| Developmental Toxicity: | Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals. Studies in laboratory animals with 2,4-D have shown decreased fetal body weights and delayed development in the offspring at doses toxic to mother animals. |
| Specific target organ toxicity- single exposure: | No data available / Not classified |
| Specific target organ toxicity- repeated exposure: | No data available / Not classified |
| Other Hazards Effects: | No data available |

SECTION 12: ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE

2, 4-dichlorophenoxy acetic acid, 2-ethylhexyl ester: The information presented below is for the active ingredient. This product is toxic to aquatic invertebrates. Drift or runoff may adversely affect aquatic invertebrates and non-target plants. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high-water mark. Do not contaminate water when disposing of equipment washwaters.

ECO-ACUTE TOXICITY

Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 is >100 mg/L in the most sensitive species tested). Material is moderately toxic to birds on an acute basis (LD50 between 51 and 500 mg/kg). Material is practically non-toxic to birds on a dietary basis (LC50 >5000 ppm).

| | | |
|----------------------------|--|---|
| Aquatic Toxicity: | Rainbow Trout, LC₅₀ 96 hour | 250 mg/L |
| | Bluegill Sunfish, LC₅₀ 96 hour | 525 mg/L |
| | Fathead minnow, LC₅₀ 96 hour | 344 mg/L |
| | Daphnia magna, LC₅₀ 48 hour | 185 mg/L |
| | Eastern oyster (Crassostrea virginica), flow-through, EC₅₀ 96 hour | 136 mg/L |
| | Pink shrimp (Penaeus duorarum) sp LC₅₀ | 182 mg/L |
| | Tidewater silverside (Menidia beryllina), LC₅₀ | 470 mg/L |
| Arthropod Toxicity: | Bees, Acute LD₅₀ | Oral No data available Contact No data available |
| | Bird Toxicity: | |
| | Mallard Duck, LD₅₀ | >5,620 ppm |
| | Mallard Duck, LD₅₀ (Acute Oral) | <500 mg/kg |
| | Bobwhite Quail, LD₅₀ | >5,620 ppm |
| | Bobwhite Quail, LD₅₀ (Acute Oral) | >5,000 ppm |

| | | |
|---------------------------------------|---|-------------------|
| Algal Toxicity: | Green Algae, EC₅₀ | 66.5 mg/L |
| | Blue - Green Algae, EC₅₀ | 153 mg/L |
| | Diatom Navicula sp., static, biomass growth inhibition, 5 d: | 5.28 mg/L |
| | Duckweed Lemna sp., static, Number of fronds, 14 d: | 0.58 mg/L |
| Soil Organism Toxicity: | Earthworm acute toxicity | No data available |
| Persistence and degradability: | No data available | |
| Bioaccumulation: | No data available | |
| Mobility in soil: | No data available | |
| Other adverse effects: | Do not contaminate water supplies, lakes, streams, ponds or drains with this product. | |

SECTION 13: DISPOSAL CONSIDERATIONS

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. This 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.

SECTION 14: TRANSPORT INFORMATION

| | | |
|------------------------------------|---|--|
| DOT: | Packages < 26 gallons | Not Regulated |
| | Packages ≥ 26 gallons | UN3082, Environmentally hazardous substance, liquid, n.o.s. (2, 4-D Ester), 9, PG-III, Marine Pollutant, RQ 100 Lbs. |
| IMDG: | UN 3082, Environmentally hazardous substance, liquid, n.o.s. (2, 4-D Ester), 9, PG-III, Marine Pollutant, RQ 100 Lbs. | |
| ICOA / IATA: | UN 3082, Environmentally hazardous substance, liquid, n.o.s. (2, 4-D Ester), 9, PG-III, RQ 100 Lbs. | |
| UN Identification No.: | UN3082 | |
| Proper Shipping Name: | Environmentally hazardous substance, liquid, n.o.s. (2, 4-D Ester) | |
| Hazard Class: | 9 | |
| Packing Group: | III | |
| Reportable Quantity (RQ): | 100 lbs. | |
| Environmental Hazard: | Marine Pollutant | |
| Freight Description: | Agricultural Herbicide Liquid, N.O.S. | |
| ERG Guide No.: | 171 | |
| Transport Information Note: | Not Regulated – See 49 CFR 173.132(b) (3) & 172.101 Appendix A. | |

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

SECTION 15: REGULATORY INFORMATION

| | |
|--|--|
| OSHA Hazard Communication Standard: | This product contains hazardous components as defined under the criteria of the Federal OSHA Hazardous Communication Standard 29 CFR 1910.1200. |
| Pesticide Registration: | This product is a pesticide registered by the Environmental Protection Agency (EPA) and is subject to certain FIFRA labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. |

