

1. IDENTIFICATION

Product name: **Defy™ LV-6**
 Chemical name of active ingredient(s): 2-Ethylhexyl Ester of 2,4-Dichlorophenoxyacetic Acid
 Manufacturer/Registrant: Makhteshim Agan of North America, Inc.
 4515 Falls of Neuse Road, Suite 300
 Raleigh, NC 27609
 Phone: 919-256-9300

For fire, spill, and/or leak emergencies, contact Infotrac: Phone: 1-800-535-5053

For medical emergencies and health and safety inquiries, contact Prostar: Phone: 1-877-250-9291

2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	%	OSHA/PEL	ACGIH/TLV	OTHER	NTP/IARC/OSHA (Carcinogen)
2-Ethylhexyl Ester of 2,4-Dichlorophenoxyacetic Acid	1928-43-4	88.4	10 mg/m ³	10 mg/m ³	NA	NA
Inert Ingredients containing Petroleum Distillates		11.6	NE	NE	NA	NA

NA=not applicable; NE: Not established

3. HAZARDS IDENTIFICATION**PHYSICAL PROPERTIES:**

Appearance: Transparent yellow liquid

Odor: Pungent odor

EMERGENCY OVERVIEW: CAUTION Prolonged or frequent repeated skin contact may cause allergic reactions in some individuals. Harmful if swallowed. Causes moderate eye irritation. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Wear protective eyewear.

ROUTES OF ENTRY: Inhalation, skin, eyes and ingestion.

POTENTIAL HEALTH EFFECTS:

EYE: May cause eye irritation.

SKIN: Harmful if absorbed through the skin. May cause skin irritation in certain individuals.

INHALATION: Harmful if inhaled. May cause irritation to the respiratory tract, headache, anesthesia, drowsiness, unconsciousness, and other effects to the central nervous system, which could be fatal.

INGESTION: Harmful if swallowed. The petroleum distillate, if aspirated into the respiratory system during ingestion or vomiting, may cause mild or severe pulmonary injury, which could be fatal.

CHRONIC: May cause liver and kidney damage. May cause reproductive and fetal effects. Effects may be delayed. Chronic exposure will cause neurological degradation and/or abnormalities.

SYMPTOMS OF OVER EXPOSURE: Overexposure by ingestion, inhalation, or skin absorption may cause nausea, vomiting, abdominal pain, decreased blood pressure, muscle weakness, and muscle spasms.

HAZARDOUS DECOMPOSITION: Can decompose at high temperatures forming irritating and toxic gases such as Hydrogen chloride, carbon oxides, and nitrogen oxides.

4. FIRST AID**FIRST AID**

IF SWALLOWED:	<ul style="list-style-type: none"> • 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. • Do not give anything by mouth to an unconscious person.
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IF IN EYES:	<ul style="list-style-type: none"> • Hold eye 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 eye. • Call a poison control center or doctor for treatment advice.
<p>Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact PROSAR at 1-877-250-9291 for emergency medical treatment information.</p>	

5. FIRE FIGHTING MEASURES

FLASHPOINT: 205°F (96.1°C) (Seta Closed Cup)

FLAMMABLE LIMITS (% in air): Not determined.

UNUSUAL FIRE, EXPOSURE AND REACTIVITY HAZARDS: Thermal decomposition during a fire can produce fumes and irritating gases.

FIRE FIGHTING PROCEDURES: Evacuate area and fight fire upwind from a safe distance to avoid hazardous vapors and decomposition products. Dike and collect fire-extinguishing water to prevent environmental damage with excessive water runoff.

SUITABLE EXTINGUISHING MEDIA: Use dry foam, dry chemical, carbon dioxide, or water spray when fighting fires involving this material. Minimize the use of water to avoid environmental contamination. Contain all runoff.

FIRE FIGHTING EQUIPMENT: Self-contained breathing apparatus with full face-piece. Full fire fighting turnout gear (Bunker gear).

HAZARDOUS DECOMPOSITION PRODUCTS: Hydrogen chloride and nitrogen oxides.

6. ACCIDENTAL RELEASE MEASURES

ACTION TO TAKE FOR SPILLS/LEAKS: Clean up spills immediately, observing precautions in Section 8 of this document. Isolate hazard area. Keep unnecessary personnel from entering.

SMALL SPILL: Contain small spill by diking with a suitable absorbent material. Sweep up absorbed spill and place material in appropriate recovery drums for disposal. **LARGE SPILL:** Contain large spill by diking with a suitable absorbent material and recover for disposal. After removal, neutralize the spill area, tools, and equipment with a dilute alkaline solution (soda ash or lime) followed by an appropriate alcohol (methanol, ethanol or isopropanol). Wash the spill area, tools, and equipment with strong soap and water solution. Absorb any excess liquid and add to the recovery drums of waste already collected. Dispose all wastes as described in Section 13.

7. HANDLING AND STORAGE

Do not contaminate water, food or feed by storage or disposal.

PRECAUTIONS TO BE TAKEN IN HANDLING: Use only in a well ventilated area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

PRECAUTIONS TO BE TAKEN IN STORAGE: Keep container tightly closed when not in use. If exposed to subfreezing temperatures, the product should be warmed to at least 40°F and mixed thoroughly before using.

STORAGE TEMPERATURE (MIN/MAX): Normal ambient temperatures.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

EYE PROTECTION: Safety goggles or full face shield.

SKIN PROTECTION: Wear coveralls or long-sleeved uniform, head covering, socks, and chemical resistant shoes. Remove contaminated clothing and wash before rewearing. Wash separately from other laundry.

HAND PROTECTION: Chemical resistant gloves such as barrier laminate, nitrile rubber, neoprene rubber or Viton®.

RESPIRATOR REQUIREMENTS: When handling in enclosed areas, when large quantities of mists are generated, or prolonged exposure is possible, 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).

ADDITIONAL PROTECTIVE MEASURES: Follow manufacturer's instructions for cleaning/maintaining personal protective equipment. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing or other materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

USER SAFETY RECOMMENDATIONS:

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

EXPOSURE GUIDELINES: Refer to Section 2.

ENGINEERING CONTROLS: Refer to product label. Proper ventilation is required when handling or using this product. Ventilate all transport vehicles prior to unloading. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Transparent yellow liquid

ODOR: Pungent odor

pH: 3.27 (1% in water)

DENSITY: 1.112 gm/cm³@25°C; 1.100 gm/cm³@40°C

FLASHPOINT: 205°F (96.1°C) (Seta Closed Cup)

VISCOSITY (CENTISTOKES): 33.5 cps@ 25° C; 14.7 cps@ 40° C

SOLUBILITY: Emulsifies with water

10. STABILITY AND REACTIVITY

GENERAL: Stable under normal use and storage conditions. However may decompose if heated.

CONDITIONS TO AVOID: Avoid excessive heat and fire.

INCOMPATIBLE MATERIALS: Avoid contact with oxidizing agents and acids.

HAZARDOUS DECOMPOSITION: Can decompose at high temperatures forming irritating and toxic gases such as Hydrogen chloride, carbon oxides, and nitrogen oxides.

HAZARDOUS POLYMERIZATION: Product will not undergo polymerization.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY/IRRITATION STUDIES:

Acute Oral LD ₅₀ (Rat):	> 1,000 mg/kg
Acute Dermal LD ₅₀ (Rabbit):	> 2,000 mg/kg
Acute Inhalation LC ₅₀ (Rat):	> 3.0 mg/L (4 hr)
Eye Irritation (Rabbit):	Slightly irritating
Dermal Irritation (Rabbit):	Slightly irritating
Dermal Sensitization (Guinea pig):	Non-sensitizer

12. ECOLOGICAL INFORMATION

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

AQUATIC TOXICITY:

LC50 (96h) for Rainbow Trout: 7.2 mg/l

LC50 (96h) for Bluegill Sunfish: > 5 mg/l

LC50 (48h) for Daphnia: > 5 mg/l

AVIAN TOXICITY:

LD50 Bobwhite Quail: > 5,620 mg/kg

LC50 (8-Day) Mallard Duck: > 5,620 ppm

ENVIRONMENTAL FATE:

2,4-D has a low binding affinity in soil and sediment particles and has been detected in groundwater at approximately 15 ppb, which is well below the drinking water levels of concern (DWLOC). Dissipation studies indicate that 2,4-D degrades rapidly in soils by its volatility, photolysis, and aerobic environments, with a half-life in soil and water at 6 to 15 days. 2,4-D is more persistent in anaerobic aquatic environments with a half-life ranging from 41 to 333 days.

13. DISPOSAL CONSIDERATIONS

END USERS MUST DISPOSE OF ANY PRODUCT AS PER THE LABEL RECOMMENDATIONS.

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

CONTAINER DISPOSAL: Dispose of product containers, waste containers, and residues according to label instructions and local, state, and federal health and environmental regulations.

14. TRANSPORT INFORMATION

DOT CLASSIFICATION:

Package size <18 gallons: Not regulated

Package size ≥18 gallons: UN 3082, Environmentally hazardous substances, liquid, N.O.S. (2,4-dichlorophenoxyacetic acid), 9, PGIII, RQ

INTERNATIONAL TRANSPORTATION:

IMO (vessel):

Package size <18 gallons: UN 3082, Environmentally hazardous substances, liquid, N.O.S. (2,4-dichlorophenoxyacetic acid), 9, PGIII, Marine pollutant

Package size ≥18 gallons: UN 3082, Environmentally hazardous substances, liquid, N.O.S. (2,4-dichlorophenoxyacetic acid), 9, PGIII, Marine pollutant, RQ

IATA (air):

Package size <18 gallons: UN 3082, Environmentally hazardous substances, liquid, N.O.S. (2,4-dichlorophenoxyacetic acid), 9, PGIII, Marine pollutant

Package size ≥18 gallons: UN 3082, Environmentally hazardous substances, liquid, N.O.S. (2,4-dichlorophenoxyacetic acid), 9, PGIII, Marine pollutant RQ

15. REGULATORY INFORMATION

SARA TITLE III CLASSIFICATION:

Section 302/304: Not applicable

Section 311/312: Immediate (Acute) Health Hazard
Delayed health hazard

Section 313 chemical(s): 2,4-D 2-EHE (CAS # 1928-43-4) 88.4%
2,4-D Acid (CAS # 94-75-7) 59.2%

CA PROPOSITION 65: Not applicable.

CERCLA REPORTABLE QUANTITY (RQ): 2,4-Dichlorophenoxyacetic acid (100 lbs.) = 18 gallons product

MATERIAL SAFETY DATA SHEET

Defy™ LV-6

Page 5 of 5

RCRA CLASSIFICATION: Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

TSCA STATUS: The ingredients of this product are listed on the TSCA inventory or are exempt.

16. OTHER INFORMATION

HAZARD RATINGS:	NFPA	0	LEAST
HEALTH:	2	1	SLIGHT
FLAMMABILITY:	1	2	MODERATE
REACTIVITY:	0	3	HIGH
		4	SEVERE

MSDS DATE: 7-25-11. Superseded version dated 5-16-11. Changes made to Sections 2 and 14.

The information contained herein is given in good faith and is believed to be correct, but no warrant, express or implied, is made. Consult Makhteshim Agan of North America, Inc. for further information.