



Safety Data Sheet

Revision Date: 19-Apr-2017

Version 1

1. IDENTIFICATION

Product Identifier

Product Name

2,4-D Ester 700 Liquid Herbicide

Other means of identification

SDS #

ADAMA-217

Registration Number(s)

Not registered in the US
Pest Control Product Reg. No. 31698

UN/ID No

UN3082

Recommended use of the chemical and restrictions on use

Recommended Use

Herbicide.

Details of the supplier of the safety data sheet

Manufacturer Address

Adama Agricultural Solutions Canada Ltd.
302 – 179 McDermot Avenue
Winnipeg, MB R2B 0S1
1-855-264-6262

Emergency Telephone Number

Emergency Telephone (24 hr)

For fire, spill and/or leak contact INFOTRAC:
1-800-535-5053 (North America) 1-352-323-3500 (International)
For medical emergencies and health/safety inquiries, contact PROSAR:
1-877-250-9291

2. HAZARDS IDENTIFICATION

This chemical is a product registered by the Canadian Pest Control Products Act and is subject to certain labeling requirements under federal law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-PCPA registered chemicals. Please see Section 15 for additional information.
This product has been classified according to Canada's Hazardous Product Regulations (WHMIS 2015) and the US Hazard Communication Standard (HCS 2012).

Appearance Amber liquid

Physical state Liquid

Odor Characteristic phenolic and hydrocarbon

Classification

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin sensitization	Category 1

Signal Word

Warning

Hazard statements

Harmful if swallowed
Harmful if inhaled
May cause an allergic skin reaction



Precautionary Statements - Prevention

Use personal protective equipment as required
 Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product
 Avoid breathing dust/fume/gas/mist/vapors/spray
 Use only outdoors or in a well-ventilated area
 Contaminated work clothing must not be allowed out of the workplace

Precautionary Statements - Response

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
 IF INHALED: Remove person to fresh air and keep comfortable for breathing
 Call a POISON CENTER or doctor/physician if you feel unwell
 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
 Rinse mouth
 Do NOT induce vomiting

Precautionary Statements - Storage

Store locked up
 Keep out of the reach of children

Precautionary Statements - Disposal

Dispose of in accordance with federal, state and local regulations

Other hazards

Very toxic to aquatic life

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Weight-%
2,4-D 2-ethylhexyl ester	1928-43-4	89-94
Petroleum Distillates	Proprietary	3-4

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

First Aid Measures

General Advice	Take container, label or product name and Pest Control Product Registration Number with you, when seeking medical attention.
Eye Contact	IF IN EYES: 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 centre or doctor for treatment advice..
Skin Contact	IF ON SKIN: take off contaminated clothing. Rinse skin immediately with plenty of water for 15–20 minutes. Call a poison control centre or doctor for treatment advice.

Inhalation	IF INHALED: move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice
Ingestion	IF SWALLOWED: call a poison control centre or doctor immediately for treatment advice. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

Most important symptoms and effects

Symptoms	Harmful if swallowed. Harmful if inhaled. May cause an allergic skin reaction.
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Indication of any immediate medical attention and special treatment needed

Notes to Physician	DO NOT induce vomiting. This product contains petroleum distillates. Vomiting may cause aspiration pneumonia. No specific antidote. Employ supportive care. This product may cause mild irritation to the eyes. Overexposure to 2,4-D may cause coughing, burning, dizziness or temporary loss of muscle coordination. Other possible effects of overexposure include fatigue, muscle weakness or nausea. Treatment should be based on judgement of the physician in response to reactions of the patient. Treat symptomatically.
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5. FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**

Water spray (fog). Alcohol foam. Carbon dioxide (CO₂). Dry chemical.

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical

Not classed as a combustible liquid, but may burn under fire conditions..

Hazardous Combustion Products Under fire conditions, may produce gases such as hydrogen chloride, nitrogen oxides and carbon oxides.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Minimize and contain water runoff.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures**

Personal Precautions	Use safety equipment and procedures appropriate to the size of the spill. Keep potential ignition sources and unnecessary people away.
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Environmental precautions

Environmental precautions	Avoid runoff to natural waters and sewers.
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Methods and material for containment and cleaning up

Methods for Containment	Prevent further leakage or spillage if safe to do so.
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Methods for Clean-Up	Surround and absorb spills with inert material such as perlite, clay granules, vermiculite, sand or dirt. Contain all affected material in a closed, labeled container for proper disposal. Isolate from other waste materials. Clean contaminated area such as hard surfaces with detergent and water, collecting cleaning solution for proper disposal. Large spills to soil or similar surfaces may necessitate removal of top soil.
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7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling

Avoid contact with skin, eyes and clothing. After use, wash hands and other exposed skin. Wear coveralls over a long-sleeved shirt, long pants, socks, shoes and chemical resistant gloves. Rinse gloves before removal. Remove and wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Contaminated work clothing must not be allowed out of the workplace. Keep out of the reach of children. If herbicide penetrates clothing remove immediately; then wash thoroughly and put on clean clothing. Throw away clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. After using this product, remove clothing and launder separately and promptly, and thoroughly wash hands and exposed skin with soap and water. Follow manufacturer's instructions for cleaning personal protective clothing and equipment. If no such instructions for washables are provided, use detergent and hot water. Keep and wash personal protective equipment separate from household laundry. After work, remove all clothing and shower using soap and water.

Conditions for safe storage, including any incompatibilities

Storage Conditions

Store locked up. Store the container tightly closed away from seeds, fertilizer, plants and foodstuffs. May be stored at any temperature. Shake well before using.

Incompatible Materials

None known

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
2,4-D 2-ethylhexyl ester	-	20 mg/m ³	TWA: 10 mg/m ³
Petroleum Distillates	-	N/E	TWA: 1200 mg/m ³

Appropriate engineering controls

Engineering Controls

Please refer to the product label. Use only with adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. When handling more than 401 L of ADAMA 2,4-D Ester 700 Liquid Herbicide per day, workers must also use a closed system.

Individual protection measures, such as personal protective equipment

Eye/Face Protection

Goggles or face shield when handling concentrate.

Skin and Body Protection

Handling the concentrate (mixing and loading): Wear coveralls over a long-sleeved shirt, long pants, chemical-resistant gloves, socks and shoes. Rinse gloves before removal.

Handling the dilute spray solution (during application or repairing or cleaning equipment): Wear coveralls over a long-sleeved shirt, long pants, chemical-resistant gloves, socks and shoes. Rinse gloves before removal.

Gloves are not required during application when applicator is in an enclosed tractor or an enclosed airplane cockpit..

Respiratory Protection

Mixers/loaders/applicators using mechanically pressurized handguns must wear a respirator if they will be handling more than 7.5 L per day. DO NOT handle more than 12 L per day.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid	Odor	Characteristic phenolic and hydrocarbon
Appearance	Amber liquid	Odor Threshold	NA
Color	Amber		
<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>	
pH	5.0 (1% aqueous)		
Melting Point/Freezing Point	< -37°C	2,4-D 2EH	
Boiling Point/Boiling Range	> 300°C	2,4-D 2EH	
Flash Point	>100°C		
Evaporation Rate	NA		
Flammability (Solid, Gas)	NA		
Flammability Limits in Air			
Upper Flammability Limits	NA		
Lower Flammability Limit	NA		
Vapor Pressure	4.80 x 10 ⁻⁴ Pa @ 25°C	2,4-D 2EH	
Vapor Density	NA		
Relative Density	1.134		
Water Solubility	Product is emulsifiable in water		
Solubility in other solvents	Product is oil soluble		
Partition Coefficient	Not determined		
Auto-ignition Temperature	Not determined		
Decomposition Temperature	>300°C	2,4-D 2EH	
Kinematic Viscosity	Not determined		
Dynamic Viscosity	34.4 cP @ 20°C		
Explosive Properties	Not determined		
Oxidizing Properties	Not determined		

10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions.

Chemical Stability

Stable under normal use and recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous Polymerization Will not occur.

Conditions to Avoid

Excessive heat. Do not store near heat or flame.

Incompatible Materials

Avoid contact with strong acidic, basic or oxidizing agents.

Hazardous Decomposition Products

Under fire conditions, may produce gases such as hydrogen chloride, nitrogen oxides and carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye Contact	Avoid contact with eyes.
Skin Contact	May cause an allergic skin reaction.
Inhalation	Harmful if inhaled.
Ingestion	Harmful if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
2,4-D 2-ethylhexyl ester	= 300 mg/kg (Rat)	-	-
Petroleum Distillates	> 5000 mg/kg (Rat)	> 2 mL/kg (Rabbit)	> 590 mg/m ³ (Rat) 4 h

Information on physical, chemical and toxicological effects

Symptoms	Please see section 4 of this SDS for symptoms.
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Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity	Based on information supplied, this product does not contain any carcinogens of potential carcinogens as listed by OSHA or NTP.
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Numerical measures of toxicity

Acute Oral LD50 (Rat): >737 mg/kg

Acute Dermal LD50 (Rabbit): >2,000 mg/kg

Acute Inhalation LC50 (Rat): 2.66 mg/L (4-hr)

Eye Irritation (Rabbit): Mildly irritating.

Dermal Irritation (Rabbit): Slightly irritating.

Dermal Sensitization (Guinea pig): Skin sensitizer.

12. ECOLOGICAL INFORMATION

Ecotoxicity

This product contains a petroleum distillate which is moderately to highly toxic to aquatic organisms. Toxic to small mammals, birds, aquatic organisms and non-target terrestrial plants. Observe buffer zones specified under DIRECTIONS FOR USE.

This product will harm other broadleaved plants in the vicinity of the treatment area. If applying this product using a mechanically pressurized handgun or backpack sprayer, do not directly spray or allow the spray to drift onto ornamentals or gardens.

Do not spray exposed roots of trees and ornamentals.

Leaching: The use of this chemical may result in contamination of groundwater particularly in areas where soils are permeable (e.g. sandy soil) and/or the depth to the water table is shallow.

Runoff: To reduce runoff from treated areas into aquatic habitats avoid application to areas with moderate to steep slope, compacted soil, or clay. Avoid application of this product when heavy rain is forecast. Contamination of aquatic areas as a result of runoff may be reduced by including a strip of untreated vegetation between the treated area and the edge of the water body. To prevent runoff, avoid spraying on driveways, sidewalks or other hard surfaces. Do not irrigate within 24 hours after application.

Chemical Name	Algae/aquatic plants	Fish	Crustacea
2,4-D 2-ethylhexyl ester	>30: 120 h Selenastrum mg/L EC50 4.1: 120 h Navicula mg/L EC50 0.23: 120 h Skeletonema mg/L EC50	7.2: 96 h Rainbow trout mg/L LC50 >5 : 96 h Bluegill mg/L LC50 0.24 96 h Tidewater Silverstide mg/L LC50	5.2: 48 h Daphnia magna mg/L EC50
Petroleum Distillates	2.5: 72 h Skeletonema costatum mg/L EC50	41: 96 h Pimephales promelas mg/L LC50 1740: 96 h Lepomis macrochirus mg/L LC50 static 2.34: 96 h Oncorhynchus mykiss mg/L	0.95: 48 h Daphnia magna mg/L EC50

		LC50 19: 96 h Pimephales promelas mg/L LC50 static 45: 96 h Pimephales promelas mg/L LC50 flow-through	
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Persistence/Degradability

In aerobic soil and water, 2,4-D 2EH is rapidly hydrolysed to 2,4-D acid, DT50 <1 day. 2,4-D is microbially degraded with typical half-life (ester and acid) of 5 to 10 days. Persistent in anaerobic environments.

Bioaccumulation

Negligible

Mobility

Moderate to high mobility potential, but rapidly degraded.

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes	Disposal should be in accordance with applicable regional, national and local laws and regulations. Please review product label for Canadian container disposal requirements.
Contaminated Packaging	Disposal should be in accordance with applicable regional, national and local laws and regulations. Please review product label for Canadian container disposal requirements.
Other Information	Do not contaminate water, food or feed by storage or disposal.

14. TRANSPORT INFORMATION

DOT

UN/ID No	UN3082
Proper Shipping Name	Environmentally Hazardous Substance, liquid, n.o.s. (2,4-D ester)
Hazard Class	9
Packing Group	III
Marine Pollutant	Yes

TDG

Section 1.45.1 of the TDG Regulations provides an exemption from documentation and safety marks only for this product and only when transported by a road or railway vehicle.

IATA

UN/ID No	UN3082
Proper Shipping Name	Environmentally Hazardous Substance, liquid, n.o.s. (2,4-D ester)
Hazard Class	9
Packing Group	III
Marine Pollutant	Yes

IMDG

UN/ID No	UN3082
Proper Shipping Name	Environmentally Hazardous Substance, liquid, n.o.s. (2,4-D ester)
Hazard Class	9
Packing Group	III
Marine Pollutant	Yes

15. REGULATORY INFORMATION

International Inventories

Chemical Name	TSCA	DSL/NDSL	EINECS/E LINCS	ENCS	IECSC	KECL	PICCS	AICS
2,4-D 2-ethylhexyl ester			X					
Petroleum Distillates	X	X	X		X	Present	X	X

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313

Chemical Name	CAS No.	Weight-%	SARA 313 - Threshold Values %
2,4-D 2-ethylhexyl ester	1928-43-4	89-94	0.1

US State Regulations

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
2,4-D 2-ethylhexyl ester 1928-43-4	X		

Pesticide Registration Number

Pest Control Product Reg. No. 31698

Pest Control Product Statement

This chemical is a pest product registered by Health Canada Pest Management Regulatory Agency and is subject to certain labelling requirements under the Pest Control Products Act. These requirements differ from the classification criteria and hazard information required for GHS-consistent safety data sheets.

Read the approved label, authorized under the Pest Control Products Act, prior to using or handling the pest control product.

Product Label

DANGER POISON

POTENTIAL SKIN SENSITIZER

WARNING – SKIN IRRITANT

Difference between SDS and product label

	Product Label	SDS
Signal Word	Danger/Warning	Warning
Acute toxicity – Oral	Fatal or poisonous if swallowed.	Harmful if swallowed
Acute toxicity - Inhalation	N/A	Harmful if inhaled
Skin irritation/corrosion	Causes skin irritation	N/A
Skin sensitization	Potential skin sensitizer	May cause an allergic skin reaction

16. OTHER INFORMATION**NFPA****Health Hazards****Flammability****Instability****Special Hazards**

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None

HMIS**Health Hazards****Flammability****Physical hazards****Personal Protection**

Not determined

Not determined

Not determined

Not determined

Revision Date:

19-Apr-2017

Revision Note:

Updated format

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet