



Safety Data Sheet

Issue Date: 06-Nov-2018

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Version 1

1. IDENTIFICATION

Product Identifier

Product Name **Arrow 240 EC**

Other means of identification

SDS # ADAMA-264

Registration Number(s) Pest Control Product Reg. No. 28224

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.
300 – 191 Lombard Avenue
Winnipeg, Manitoba R3B 0X1
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 ProPharma Group:
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 mild aromatic

Classification

Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2B
Carcinogenicity	Category 2
Aspiration toxicity	Category 1
Flammable Liquids	Category 4

Signal Word

Danger

Hazard statements

Harmful if inhaled
 Causes skin irritation
 Causes eye irritation
 Suspected of causing cancer
 May be fatal if swallowed and enters airways
 Combustible liquid

**Precautionary Statements - Prevention**

Obtain special instructions before use
 Do not handle until all safety precautions have been read and understood
 Use personal protective equipment as required
 Avoid breathing dust/fume/gas/mist/vapors/spray
 Use only outdoors or in a well-ventilated area
 Wash face, hands and any exposed skin thoroughly after handling
 Keep away from heat/sparks/open flames/hot surfaces. — No smoking

Precautionary Statements - Response

If exposed or concerned: Get medical advice/attention
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 If eye irritation persists: Get medical advice/attention
 IF ON SKIN: Wash with plenty of water and soap
 Take off contaminated clothing and wash it before reuse
 If skin irritation occurs: Get medical advice/attention
 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: Immediately call a POISON CENTER or doctor/physician
 Do NOT induce vomiting
 In case of fire: Use CO₂, dry chemical, or foam for extinction

Precautionary Statements - Storage

Store locked up
 Store in a well-ventilated place. Keep cool
 Keep out of the reach of children

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Weight-%
Clethodim	99129-21-2	>24.5
Naphtha (petroleum), heavy aromatic	64742-94-5	20-30
Naphthalene	91-20-3	<3

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 the container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.
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.
Skin Contact	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
Inhalation	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.
Ingestion	Call a poison control center or doctor immediately for treatment advice. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give any liquids to the person. Do not give anything by mouth to an unconscious person.

Most important symptoms and effects

Symptoms	Harmful if inhaled. Causes skin and eye irritation.
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Indication of any immediate medical attention and special treatment needed

Notes to Physician	Treat the patient symptomatically. This product contains petroleum distillates. Vomiting may cause aspiration pneumonia.
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5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical

Not determined.

Protective equipment and precautions for firefighters

Liquid evaporates and forms vapor (fumes), which can catch fire and burn with explosive violence. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Fire hazard is greater as liquid temperature rises above 85°F. Products of combustion from fires involving this material may be toxic. Avoid breathing smoke and mists. Avoid personnel and equipment contact with fallout and runoff. Minimize the amount of water used for fire fighting. Do not enter any enclosed area without full protective equipment, including self-contained breathing equipment. Contain and isolate runoff and debris for proper disposal. Decontaminate personal protective equipment and fire fighting equipment before reuse. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions	Use personal protective equipment as required.
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Environmental precautions

Environmental precautions	See Section 12 for additional Ecological Information.
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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.

Methods for Clean-Up Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE**Precautions for safe handling**

Advice on Safe Handling Keep out of the reach of children. May irritate skin and eyes. Avoid contact with skin eyes and clothing. Wash concentrate from skin or eyes immediately. Do not inhale fumes. Avoid breathing vapors or spray mist. After use, wash hands and other exposed skin. When using, do not eat, drink or smoke. Remove and launder contaminated clothing separately from household laundry before reuse. Avoid spray drift. Avoid contamination of ponds, streams, rivers and desirable vegetation. Observe appropriate state buffer zones around bodies of water and wetland areas. When handling the concentrate, mixing, loading or during cleanup and repair, wear goggles or face shield, rubber apron, chemically resistant gloves, rubber boots, long sleeved shirt and long legged pants.

Conditions for safe storage, including any incompatibilities

Storage Conditions May be stored at any temperature. Shake well before using. Insecticides and fungicides should be segregated from herbicides so as to prevent the possibility of cross-contamination. Store the container tightly closed and away from seeds, feeds, fertilizer, plants and foodstuffs.

Incompatible Materials None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Exposure Guidelines**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Naphthalene 91-20-3	TWA: 10 ppm S* (Skin)	TWA: 10 ppm TWA: 50 mg/m ³ (vacated) TWA: 10 ppm (vacated) TWA: 50 mg/m ³ (vacated) STEL: 15 ppm (vacated) STEL: 75 mg/m ³	IDLH: 250 ppm TWA: 10 ppm TWA: 50 mg/m ³ STEL: 15 ppm STEL: 75 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.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Wear goggles or face shield.

Skin and Body Protection Rubber apron. Chemically resistant gloves. Rubber boots. Long sleeve shirt and long pants.

Respiratory Protection This material may be a respiratory irritant and, unless ventilation is adequate, the use of approved respiratory protection is recommended. Use this material only in well-ventilated areas.

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	mild aromatic
Appearance	Amber liquid	Odor Threshold	Not determined
Color	Amber		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	4.44	
Melting Point/Freezing Point	Not determined	
Boiling Point/Boiling Range	Not determined	
Flash Point	65 °C / 149 °F	
Evaporation Rate	Not determined	
Flammability (Solid, Gas)	Not determined	
Flammability Limits in Air		
Upper Flammability Limits	Not determined	
Lower Flammability Limit	Not determined	
Vapor Pressure	Not determined	
Vapor Density	Not determined	
Relative Density	Not determined	
Water Solubility	Emulsifiable	
Solubility in other solvents	Not determined	
Partition Coefficient	Not determined	
Auto-ignition Temperature	Not determined	
Decomposition Temperature	Not determined	
Kinematic Viscosity	Not determined	
Dynamic Viscosity	Not determined	
Explosive Properties	Not determined	
Oxidizing Properties	Not determined	

Other Information

Density	0.967 g/mL
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10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions.

Chemical Stability

Stable under recommended storage conditions.
Do not allow product to freeze. Store above 18° F (-8° C).

Possibility of Hazardous Reactions

None under normal processing.

Conditions to Avoid

None known.

Incompatible Materials

Incompatible with strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous Decomposition Products

Normal combustion forms carbon dioxide, water vapor and may produce oxides of nitrogen, sulfur. Combustion may produce toxic compounds of chlorine. Incomplete combustion can produce carbon monoxide.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye Contact	Causes eye irritation.
Skin Contact	Causes skin irritation.
Inhalation	Harmful if inhaled.
Ingestion	Do not ingest.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Clethodim 99129-21-2	= 1360 mg/kg (Rat)	-	-
Naphtha (petroleum), heavy aromatic 64742-94-5	> 5000 mg/kg (Rat)	> 2 mL/kg (Rabbit)	> 590 mg/m ³ (Rat) 4 h
Naphthalene 91-20-3	= 1110 mg/kg (Rat) = 490 mg/kg (Rat)	(> 20 g/kg (Rabbit) = 1120 mg/kg (Rabbit)	> 340 mg/m ³ (Rat) 1 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	Suspected of causing cancer.
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Chemical Name	ACGIH	IARC	NTP	OSHA
Naphthalene 91-20-3	A3	Group 2B	Reasonably Anticipated	X

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)
 A3 - Animal Carcinogen
IARC (International Agency for Research on Cancer)
 Group 2B - Possibly Carcinogenic to Humans
NTP (National Toxicology Program)
 Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
 X - Present

Product Information (Numerical measures of toxicity)

Acute Oral LD50 (Rat): 2,000-5,000 mg/kg
Acute Dermal LD50 (Rabbit): >5,000 mg/kg
Acute Inhalation LC50 (Rat): >2.09 mg/L
Eye Irritation: Moderately irritating
Dermal Irritation: Moderately irritating
Dermal Sensitization: Not a contact sensitizer

12. ECOLOGICAL INFORMATION

Ecotoxicity

This product contains aromatic petroleum distillates which are moderately to highly toxic to aquatic organisms. Avoid contamination of aquatic systems during application. Do not contaminate these systems through direct application, disposal of waste or cleaning equipment.

Component Information

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Naphtha (petroleum), heavy aromatic	2.5: 72 h Skeletonema costatum mg/L EC50	41: 96 h Pimephales promelas mg/L LC50 2.34: 96 h Oncorhynchus	0.95: 48 h Daphnia magna mg/L EC50

64742-94-5		mykiss mg/L LC50 19: 96 h Pimephales promelas mg/L LC50 static 45: 96 h Pimephales promelas mg/L LC50 flow-through 1740: 96 h Lepomis macrochirus mg/L LC50 static	
Naphthalene 91-20-3	0.4: 72 h Skeletonema costatum mg/L EC50	31.0265: 96 h Lepomis macrochirus mg/L LC50 static 5.74 - 6.44: 96 h Pimephales promelas mg/L LC50 flow-through 1.6: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 0.91 - 2.82: 96 h Oncorhynchus mykiss mg/L LC50 static 1.99: 96 h Pimephales promelas mg/L LC50 static	2.16: 48 h Daphnia magna mg/L LC50 1.96: 48 h Daphnia magna mg/L EC50 Flow through 1.09 - 3.4: 48 h Daphnia magna mg/L EC50 Static

Persistence/Degradability

Not determined.

Bioaccumulation

Not determined.

Mobility

Chemical Name	Partition Coefficient
Naphtha (petroleum), heavy aromatic 64742-94-5	2.9 - 6.1
Naphthalene 91-20-3	3.6

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS**Waste Treatment Methods****Disposal of Wastes**

For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for cleanup of spills.

Contaminated Packaging

Do not reuse this container for any purpose. This is a recyclable container, and is to be disposed of at a container collection site. Contact your local distributor/dealer or municipality for the location of the nearest collection site. Before taking the container to the collection site:

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Make the empty, rinsed container unsuitable for further use.

If there is no container collection site in your area, dispose of the container in accordance with provincial requirements.

US EPA Waste Number

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Naphthalene 91-20-3	U165	Included in waste streams: F024, F025, F034, F039, K001, K035, K060, K087, K145		U165

Chemical Name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Naphthalene 91-20-3			Toxic waste waste number F025 Waste description: Condensed light ends, spent filters and filter aids, and	

			spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution.	
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California Hazardous Waste Status

Chemical Name	California Hazardous Waste Status
Naphthalene 91-20-3	Toxic

14. TRANSPORT INFORMATION**DOT**

Non-bulk: Not regulated

Bulk (>119 gallons): NA1993, Combustible liquid, N.O.S. (Naphthalene), PG III*

* For shipments > 563 gallons RQ is required in the shipping description.

TDG

Not regulated

IATA

Not regulated

IMDG

Not regulated

15. REGULATORY INFORMATION**International Inventories**

Chemical Name	TSCA	DSL/NDSL	EINECS/E LINCS	ENCS	IECSC	KECL	PICCS	AICS
Clethodim	X			Present	X			
Naphtha (petroleum), heavy aromatic	X	X	X		X	Present	X	X
Naphthalene	X	X	X	Present	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****CERCLA**

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Naphthalene 91-20-3	100 lb		RQ 100 lb final RQ RQ 45.4 kg final RQ

SARA 313

Chemical Name	CAS No.	Weight-%	SARA 313 - Threshold Values %
Naphthalene - 91-20-3	91-20-3	<3	0.1

CWA (Clean Water Act)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Naphthalene	100 lb	X	X	X

US State Regulations**California Proposition 65**

This product contains the following Proposition 65 chemicals.

Chemical Name	California Proposition 65
Naphthalene - 91-20-3	Carcinogen

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Naphthalene 91-20-3	X	X	X

Pesticide Registration Number Pest Control Product Reg. No. 28224

Pest Control Product Statement

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.

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

Product Label

Caution: eye and skin irritant

Keep out of reach of children

Read the label and booklet before using

Difference between SDS and product label

	PCPA	SDS
Signal Word	Caution	Danger
Acute Toxicity- inhalation	N/A	Harmful if inhaled
Skin Corrosion/Irritation	Skin irritant	Causes skin irritation
Serious Eye Damage/Irritation	Eye irritant	Causes eye irritation
Carcinogenicity	N/A	Suspected of causing cancer
Aspiration Toxicity	N/A	May be fatal if swallowed and enters airways

16. OTHER INFORMATION**NFPA****Health Hazards**

Not determined

Flammability

Not determined

Instability

Not determined

Special Hazards

Not determined

HMIS**Health Hazards**

Not determined

Flammability

Not determined

Physical hazards

Not determined

Personal Protection

Not determined

Revision Date: 06-Nov-2018

Revision Note: New 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