



Safety Data Sheet

Issue Date: 10-June-2019

Revision Date: 10-June-2019

Version 3

1. IDENTIFICATION

Product identifier

Product Name

Arrow All In

Other means of identification

SDS #

ADAMA-290

Registration Number(s)

Pest Control Reg. No. 33225

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.
300-191 Lombard Avenue
Winnipeg, Manitoba R3B 0X1
1-855-264-6262

Emergency telephone number

Emergency Telephone

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).

Appearance Amber liquid

Physical state Liquid

Odor mild aromatic

Classification

Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Serious eye damage/eye irritation	Category 2A
Carcinogenicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Aspiration toxicity	Category 1
Flammable liquids	Category 4

Signal Word

Warning

Hazard statements

Harmful if inhaled
Causes eye irritation
Suspected of causing cancer
May cause drowsiness or dizziness
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	11-15
Mineral Oil	8042-47-5	37-41
Naphtha (petroleum), heavy aromatic	64742-94-5	35-39
Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt	90194-26-6	1-3
2-Ethylhexanol	104-76-7	1-3
Naphthalene	91-20-3	<1

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

Description of 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, both acute and delayed

Symptoms	Harmful if inhaled. Causes serious eye irritation. May be harmful or fatal if swallowed and enters airways. May cause drowsiness or dizziness.
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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

Combustible liquid.

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 firefighting 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.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

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. Store the container tightly closed and away from seeds, feeds, fertilizer, plants and foodstuffs. 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 Product must be stored at temperature higher than 2°C. 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 Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Naphthalene 91-20-3	TWA: 10 ppm S*	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 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	3-6	
Melting point / freezing point	Not determined	
Boiling point / boiling range	Not determined	
Flash point	66.6°C	
Evaporation Rate	Not determined	
Flammability (Solid, Gas)	Not determined	
Flammability Limit in Air		
Upper flammability or explosive limits	Not determined	
Lower flammability or explosive limits	Not determined	
Vapor Pressure	Not determined	
Vapor Density	Not determined	
Relative Density	0.9-0.93	
Water Solubility	Not determined	
Solubility in other solvents	Not determined	
Partition Coefficient	Not determined	
Autoignition temperature	Not determined	
Decomposition temperature	Not determined	
Kinematic viscosity	5.189	
Dynamic Viscosity	Not determined	
Explosive Properties	Not determined	
Oxidizing Properties	Not determined	

10. STABILITY AND REACTIVITY**Reactivity**

Not reactive under normal conditions.

Chemical stability

Stable under normal 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

Strong oxidizing agents.

Hazardous decomposition products

Incomplete decomposition products may include carbon monoxide. Ultimate decomposition products are carbon dioxide and water. Oxides of nitrogen. Oxides of sulfur.

11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure**

Eye Contact	Causes serious eye irritation.
Skin Contact	Avoid contact with skin.
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)	> 5000 mg/kg (Rabbit)	> 3.25 mg/L (Rat) 4 h
Mineral Oil 8042-47-5	> 5000 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
2-Ethylhexanol 104-76-7	= 3730 mg/kg (Rat)	= 1980 mg/kg (Rabbit)	> 227 ppm (Rat) 6 h
Naphthalene 91-20-3	= 1110 mg/kg (Rat) = 490 mg/kg (Rat)	(= 1120 mg/kg (Rabbit) > 20 g/kg (Rabbit)	> 340 mg/m ³ (Rat) 1 h

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Please see section 4 of this SDS for symptoms.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity Suspected of causing cancer.

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*

STOT - single exposure May cause drowsiness or dizziness.

Numerical measures of toxicity**Acute Oral LD50 (Rat):** >2,000 mg/kg**Acute Dermal LD50 (Rabbit):** >2,000 mg/kg**Acute Inhalation LC50 (Rat):** 4.01 mg/L**Eye Irritation:** Irritating**Dermal Irritation:** Not 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
Mineral Oil 8042-47-5		10000: 96 h <i>Lepomis macrochirus</i> mg/L LC50	
Naphtha (petroleum), heavy aromatic 64742-94-5	2.5: 72 h <i>Skeletonema costatum</i> mg/L EC50	1740: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 41: 96 h <i>Pimephales promelas</i> mg/L LC50 2.34: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 19: 96 h <i>Pimephales</i> <i>promelas</i> mg/L LC50 static 45: 96 h <i>Pimephales promelas</i> mg/L LC50 flow-through	0.95: 48 h <i>Daphnia magna</i> mg/L EC50
2-Ethylhexanol 104-76-7	11.5: 72 h <i>Desmodesmus</i> <i>subspicatus</i> mg/L EC50	7.5: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 27 - 29.5: 96 h <i>Pimephales promelas</i> mg/L LC50 flow-through 32 - 37: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 static 29.7: 96 h <i>Pimephales</i> <i>promelas</i> mg/L LC50 static 10.0 - 33.0: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static	39: 48 h <i>Daphnia magna</i> mg/L EC50
Naphthalene 91-20-3	0.4: 72 h <i>Skeletonema costatum</i> mg/L EC50	1.99: 96 h <i>Pimephales promelas</i> mg/L LC50 static 31.0265: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 1.6: 96 h <i>Oncorhynchus</i> <i>mykiss</i> mg/L LC50 flow-through 0.91 - 2.82: 96 h <i>Oncorhynchus</i> <i>mykiss</i> mg/L LC50 static 5.74 - 6.44: 96 h <i>Pimephales promelas</i> mg/L LC50 flow-through	1.09 - 3.4: 48 h <i>Daphnia magna</i> mg/L EC50 Static 2.16: 48 h <i>Daphnia magna</i> mg/L LC50 1.96: 48 h <i>Daphnia magna</i> mg/L EC50 Flow through

Persistence/Degradability

Not determined.

Bioaccumulation

There is no data for this product.

Mobility

Chemical name	Partition coefficient
Mineral Oil 8042-47-5	>6
Naphtha (petroleum), heavy aromatic 64742-94-5	2.9 - 6.1
2-Ethylhexanol 104-76-7	3.1
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. If there is no container collection site in your area, dispose of the container in accordance with provincial requirements.

14. TRANSPORT INFORMATION**DOT**

UN/ID No UN3082
Proper Shipping Name Environmentally hazardous substances, liquid, n.o.s. (Clethodim, Hydrocarbons)
Hazard class 9
Packing Group III
Marine Pollutant Yes.

IATA

UN number UN3082
Proper Shipping Name Environmentally hazardous substances, liquid, n.o.s. (Clethodim, Hydrocarbons)
Transport hazard class(es) 9
Packing Group III
Marine Pollutant Yes

IMDG

UN number UN3082
Proper Shipping Name Environmentally hazardous substances, liquid, n.o.s. (Clethodim, Hydrocarbons)
Transport hazard class(es) 9
Packing Group III
Marine Pollutant Yes

TDG

UN/ID No UN3082
Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s. (Clethodim, Hydrocarbons)
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
Clethodim	X			X	X			
Mineral Oil	X	X	X	X	X	X	X	X
Naphtha (petroleum), heavy aromatic	X	X	X		X	X	X	X
Benzenesulfonic acid, C10-		X	X	X	X		X	X

13-alkyl dervis., calcium salt								
2-Ethylhexanol	X	X	X	X	X	X	X	X
Naphthalene	X	X	X	X	X	X	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**

Not applicable

CWA (Clean Water Act)

Not applicable

US State Regulations**California Proposition 65**

Not applicable

U.S. State Right-to-Know Regulations

Not applicable

EPA Pesticide Registration Number Pest Control Product Reg. No. 33225**EPA 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. Following is the hazard information as required on the pesticide label:

EPA Pesticide Label

CAUTION

POISON

Difference between SDS and EPA pesticide label

	PCPA	SDS
Signal Word	Caution	Danger
Acute toxicity - Inhalation (Dusts/Mists)		Harmful if inhaled
Serious eye damage/eye irritation	N/A	Causes serious eye irritation
Carcinogenicity	N/A	Suspected of causing cancer
Specific target organ toxicity (single exposure)	N/A	May cause drowsiness or dizziness
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

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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