# Safety Data Sheet

**Issue Date:** 26-Jan-2023 **Revision Date:** 27-Jan-2023 **Version** 1

## 1. IDENTIFICATION

**Product identifier**

**Product Name** Palouse

**Other means of identification**

**SDS #** ADAMA-351

**Registration Number(s)** EPA Reg No. 66222-296

**UN/ID No** NA1993

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Herbicide.

**Details of the supplier of the safety data sheet**

**Manufacturer Address**

Makhteshim Agan of North America, Inc. (d/b/a ADAMA)
3120 Highwoods Blvd., Suite 100
Raleigh, NC 27604
1-919-256-9300

**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 Environmental Protection Agency 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-EPA registered chemicals. Please see Section 15 for additional EPA information.

**Appearance** Amber to brown liquid **Physical state** Liquid **Odor** Hydrocarbon

**Classification**

| | |
|---|---|
| Acute toxicity - Oral | Category 4 |
| Acute toxicity - Inhalation (Dusts/Mists) | Category 3 |
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 2A |
| Skin sensitization | Category 1 |
| Carcinogenicity | Category 2 |
| Aspiration toxicity | Category 1 |
| Flammable liquids | Category 4 |

**Signal Word**

**Danger**

**Hazard statements**
Harmful if swallowed
Toxic if inhaled
Causes skin irritation
Causes serious eye irritation
May cause an allergic skin reaction
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
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
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 before reuse
If skin irritation or rash 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 SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Rinse mouth
Do NOT induce vomiting
IN CASE OF FIRE: Use CO2, dry chemical, alcohol foam, and water spray for extinction

**Precautionary Statements - Storage**
Store in a well-ventilated place. Keep container tightly closed
Store locked up
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-% |
|---|---|---|
| Bromoxynil octanoate (octanoic acid,2,6-dibromo-4-cyanophenyl ester) | 1689-99-2 | 30-35 |
| Solvent 1 | Proprietary | 50-60 |
| Solvent 2 | Proprietary | <1 |
| Emulsifiers | Proprietary | 5-15 |

**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** If exposed or concerned: Get medical advice/attention.

**Eye Contact** 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.

**Skin Contact** Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical advice/attention.

**Inhalation** Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician.

**Ingestion** Immediately call a poison center or doctor/physician. Rinse mouth. Do NOT induce vomiting.

**Most important symptoms and effects, both acute and delayed**

**Symptoms** Harmful if swallowed. Toxic if inhaled. Causes skin irritation. Causes serious eye irritation. May cause an allergic skin reaction. Suspected of causing cancer. May be fatal if swallowed and enters airways.

**Indication of any immediate medical attention and special treatment needed**

**Notes to Physician** This product contains petroleum distillates. Vomiting may cause aspiration pneumonia. Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media**
Water spray (fog). Alcohol resistant foam. Carbon dioxide (CO2). Dry chemical.

**Unsuitable Extinguishing Media** Not determined.

**Specific Hazards Arising from the Chemical**
None known.

**Explosion Data**
**Sensitivity to Mechanical Impact** No sensitivity expected based on similar products.
**Sensitivity to Static Discharge** Sensitivity possible based on solvent data.

**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.

## 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.

**Environmental precautions**

**Environmental precautions** Avoid runoff to natural waters and sewers.

**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** Surround and absorb spills with inert material such as perlite, clay granules, vermiculite, sand or dirt. Contain all affect 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.

## 7. HANDLING AND STORAGE

**Precautions for safe handling**

**Advice on Safe Handling** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. 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. Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions** Keep container tightly closed. Store locked up. Keep out of the reach of children.

**Incompatible Materials** Avoid contact with strong acidic, basic or oxidizing agents.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure Guidelines**

| Chemical name | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|---|---|---|---|
| Trade Secret | TWA: 10 ppm<br>S* | TWA: 10 ppm<br>TWA: 50 mg/m$^3$<br>(vacated) TWA: 10 ppm<br>(vacated) TWA: 50 mg/m$^3$<br>(vacated) STEL: 15 ppm<br>(vacated) STEL: 75 mg/m$^3$ | IDLH: 250 ppm<br>TWA: 10 ppm<br>TWA: 50 mg/m$^3$<br>STEL: 15 ppm<br>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** Goggles or face shield when handling concentrate.

| | |
|---|---|
| **Skin and Body Protection** | Chemical-resistant gloves such as nitrile. Long sleeved shirt, long pants, socks and shoes suggested as minimum work clothing. Coveralls or a chemical-resistant apron should also be worn when open pouring from containers greater than 5L. Use other equipment appropriate to specific situations. |
| **Respiratory Protection** | Use an approved pesticide respirator if ventilation is not adequate or exposure to sprays, mists or concentrated vapors is likely. |
| **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 | | |
| **Appearance** | Amber to brown liquid | **Odor** | Hydrocarbon |
| **Color** | Amber to brown | **Odor Threshold** | Not determined |

| **Property** | **Values** | **Remarks • Method** |
|---|---|---|
| **pH** | Approximately 4-5 (1% aqueous) | |
| **Melting point / freezing point** | approx. 20°C / -4°F | |
| **Initial boiling point and boiling range** | NA | |
| **Flash point** | >65°C / >149°F | |
| **Evaporation Rate** | NA | |
| **Flammability (Solid, Gas)** | Liquid-Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability or explosive limits** | NA | |
| **Lower flammability or explosive limits** | NA | |
| **Vapor Pressure** | NA | |
| **Vapor Density** | NA | |
| **Relative Density** | About 1.049 | |
| **Water Solubility** | Not determined | |
| **Solubility in other solvents** | NA | |
| **Partition Coefficient** | Not determined | |
| **Autoignition temperature** | NA | |
| **Hyphen** | Not determined | |
| **Kinematic viscosity** | Not determined | |
| **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 recommended storage conditions.

**Possibility of hazardous reactions**
None under normal processing.

**Hazardous Polymerization** Under normal conditions of storage and use, hazardous polymerization will not occur.

**Conditions to Avoid**
Heat, flames and sparks.

**Incompatible materials**
Avoid contact with strong acidic, basic or oxidizing agents.

**Hazardous decomposition products**
Hydrogen bromide, other bromine compounds, carbon dioxide, carbon monoxide, oxides of nitrogen, oxides of sulfur and other potentially toxic combustion products may be present.

## 11. TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure**

**Product Information**

**Eye Contact** Causes serious eye irritation.

**Skin Contact** Causes skin irritation.

**Inhalation** Toxic if inhaled.

**Ingestion** Harmful if swallowed.

**Component Information**

| Chemical name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---|---|---|---|
| Bromoxynil octanoate (octanoic acid,2,6-dibromo-4-cyanophenyl ester) 1689-99-2 | = 238 mg/kg ( Rat ) | = 1310 mg/kg ( Rabbit ) | - |
| Trade Secret | > 5000 mg/kg ( Rat ) | > 2000 mg/kg ( Rabbit ) | > 590 mg/m$^3$ ( Rat ) 4 h |
| Trade Secret | = 1110 mg/kg ( Rat ) | = 1120 mg/kg ( Rabbit ) | > 0.4 mg/L ( Rat ) 4 h |
| Trade Secret | > 90 mL/kg ( Rat ) | - | - |

**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**

**Sensitization** May cause an allergic skin reaction.

**Carcinogenicity** Suspected of causing cancer.

| Chemical name | ACGIH | IARC | NTP | OSHA |
|---|---|---|---|---|
| Trade Secret | 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*

**Aspiration hazard** May be fatal if swallowed and enters airways.

**Numerical measures of toxicity**
Not determined

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

This product is toxic to aquatic organisms and non-target terrestrial plants. Do not apply to any body of water. Avoid drifting of spray onto any body of water or other non-target areas.

**Component Information**

| Chemical name | Algae/aquatic plants | Fish | Crustacea |
|---|---|---|---|
| Solvent 1 | | LC50: =19mg/L (96h, Pimephales promelas)<br>LC50: =2.34mg/L (96h, Oncorhynchus mykiss)<br>LC50: =1740mg/L (96h, Lepomis macrochirus)<br>LC50: =45mg/L (96h, Pimephales promelas)<br>LC50: =41mg/L (96h, Pimephales promelas) | EC50: =0.95mg/L (48h, Daphnia magna) |
| Solvent 2 | | LC50: 5.74 - 6.44mg/L (96h, Pimephales promelas)<br>LC50: =1.6mg/L (96h, Oncorhynchus mykiss)<br>LC50: 0.91 - 2.82mg/L (96h, Oncorhynchus mykiss)<br>LC50: =1.99mg/L (96h, Pimephales promelas)<br>LC50: =31.0265mg/L (96h, Lepomis macrochirus) | LC50: =2.16mg/L (48h, Daphnia magna)<br>EC50: =1.96mg/L (48h, Daphnia magna)<br>EC50: 1.09 - 3.4mg/L (48h, Daphnia magna) |

**Persistence/Degradability**

Not determined.

**Bioaccumulation**

There is no data for this product.

**Mobility**

| Chemical name | Partition coefficient |
|---|---|
| Solvent 1 | 6.5 |
| Solvent 2 | 3.4 |

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

**Contaminated Packaging** Disposal should be in accordance with applicable regional, national and local laws and regulations.

**US EPA Waste Number**

| Chemical name | RCRA | RCRA - Basis for Listing | RCRA - D Series Wastes | RCRA - U Series Wastes |
|---|---|---|---|---|
| Trade Secret | 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 |
|---|---|---|---|---|
| Trade Secret | | | Toxic waste<br>waste number F025<br>Waste description:<br>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. | |

**California Hazardous Waste Status**

| Chemical name | California Hazardous Waste Status |
|---|---|
| Solvent 2 | Toxic |

## 14. TRANSPORT INFORMATION

**Note** Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

**DOT** NOT REGULATED if shipped in NON BULK packaging (single containers less than 119 gal/ 882 lbs) by ground transport

BULK Packaging (single containers larger than 119 gal/ 882 lbs):

**UN/ID No** NA1993
**Proper Shipping Name** Combustible liquid, n.o.s. (Petroleum distillates)
**Transport hazard class(es)** Comb liq
**Packing Group** III
**Marine Pollutant** This material ships as a marine pollutant when single container exceeds 119 gal/ 882 lbs.

**IATA**
**UN number or ID number** UN3082
**Proper Shipping Name** Environmentally Hazardous Substance, liquid, n.o.s. (Bromoxynil, 2,4-D)
**Transport hazard class(es)** 9
**Packing group** III
**Description** This material ships as a marine pollutant when inner packagings exceed 5L/5KG

**IMDG**
**UN number or ID number** UN3082
**Proper Shipping Name** Environmentally Hazardous Substance, liquid, n.o.s. (Bromoxynil, 2,4-D)
**Transport hazard class(es)** 9
**Packing Group** III
**Marine Pollutant** This material ships as a marine pollutant when inner packagings exceed 5L/5KG

## 15. REGULATORY INFORMATION

**International Inventories**

| Chemical name | TSCA | TSCA Inventory Status | DSL/NDSL | EINECS/ELINCS | ENCS | IECSC | KECL | PICCS | AIIC |
|---|---|---|---|---|---|---|---|---|---|
| Bromoxynil octanoate (octanoic acid,2,6-dibromo-4-cyanophenyl ester) | X | ACTIVE | X | X | | X | | | |
| Trade Secret | X | ACTIVE | X | X | | X | X | X | X |
| Trade Secret | X | ACTIVE | X | X | X | X | X | X | X |
| Trade Secret | X | ACTIVE | 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**

| Chemical name | Hazardous Substances RQs | CERCLA/SARA RQ | Reportable Quantity (RQ) |
|---|---|---|---|
| Trade Secret | 100 lb | | RQ 100 lb final RQ<br>RQ 45.4 kg final RQ |

**SARA 313**

| Chemical name | CAS No | Weight-% | SARA 313 - Threshold Values % |
|---|---|---|---|
| Bromoxynil octanoate (octanoic acid,2,6-dibromo-4-cyanophenyl ester) - 1689-99-2 | 1689-99-2 | 30-35 | 1.0 |
| Solvent 2 - | | <1 | 0.1 |

**CWA (Clean Water Act)**

| Chemical name | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|---|---|---|---|---|
| Solvent 2 | 100 lb | X | X | X |

**US State Regulations**

**California Proposition 65**

This product contains the following Proposition 65 chemicals.

| Chemical name | California Proposition 65 |
|---|---|
| Bromoxynil octanoate (octanoic acid,2,6-dibromo-4-cyanophenyl ester) - 1689-99-2 | Developmental |
| Trade Secret - | Carcinogen |

**U.S. State Right-to-Know Regulations**

| Chemical name | New Jersey | Massachusetts | Pennsylvania |
|---|---|---|---|
| Bromoxynil octanoate (octanoic acid,2,6-dibromo-4-cyanophenyl ester)<br>1689-99-2 | X | | |
| Trade Secret | X | X | X |
| Trade Secret | | | X |

**EPA Pesticide Registration Number** EPA Reg No 66222-296

**EPA Statement**

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

**EPA Pesticide Label**

Please refer to EPA label for additional information

**Difference between SDS and EPA pesticide label**

Please refer to EPA label for additional information

## 16. OTHER INFORMATION

| | | | | |
|---|---|---|---|---|
| **NFPA** | **Health hazards** | **Flammability** | **Instability** | **Special hazards** |
| | - | - | - | - |
| **HMIS** | **Health hazards** | **Flammability** | **Physical hazards** | **Personal Protection** |
| | - | - | - | Not determined |

**Issue Date:** 26-Jan-2023
**Revision Date:** 27-Jan-2023
**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**