



# SAFETY DATA SHEET

## SECTION 1 — PRODUCT IDENTIFICATION

**Product identifier:** VDS-3000 – Stabilized N-Propyl Bromide

**Product Number:** 1610, 1611, 1614

**Product use:** Cleaner-Degreaser, Printed Circuit Boards cleaning, Precision cleaning, Metal cleaning, Carbon removal, Automotive parts cleaning, Drying agent.

**Manufacturer's name and address:** Refer to supplier

**Supplier name and address:**

### ***ALBATROSS USA INC./EXPERT WORLDWIDE***

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Long Island City, New York  
United States  
11106  
718-392-6272

5439 San Fernando Road West  
Los Angeles, California  
United States  
90039  
818-543-5850

**Emergency Telephone #:** Chemtrec (Day or Night) 800-424-9300  
(For Chemical Emergency: Spill, Leak, Fire, Exposure or Accident)

This MSDS complies with 29CFR 19190.1200 (Hazard Communication Standard) and WHMIS regulations.  
**IMPORTANT:** Read this MSDS before handling and disposing of this product. Pass this information on to employees, customers, and users of this product.

## SECTION 2 — HAZARDS IDENTIFICATION

### **Emergency Overview**

Warning! Vapor harmful if inhaled. May cause liver damage. May cause nervous system effects. Possible risk of harm to the unborn child. Breathing vapors may cause drowsiness and dizziness. May impair fertility. Causes eye, skin, and respiratory tract irritation.

| <b>HMIS</b>    |          |
|----------------|----------|
| <b>H</b>       | <b>2</b> |
| <b>F</b>       | <b>0</b> |
| <b>R</b>       | <b>0</b> |
| <b>PPE†</b>    |          |
| <b>†Sec. 8</b> |          |

### **Potential Health Effects**

**Target Organs:** Liver, nervous system, reproductive system

**Primary Entry Routes:** Liver, nervous system, reproductive system

### **HAZARDS IDENTIFICATION**

#### **Classification of the substance or mixture**

#### **GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Skin irritation (Category 2), H315 Eye irritation (Category 2A), H319

Reproductive toxicity (Category 1B), H360

Specific target organ toxicity - single exposure (Category 2), H371

Specific target organ toxicity - single exposure (Category 3), Respiratory system, Central nervous system, H335, H336

Acute aquatic toxicity (Category 3), H402

Chronic aquatic toxicity (Category 3), H412

#### **GHS Label elements, including precautionary statements**

Pictogram



Signal word            Caution

**Hazard statement(s)**

H315 Causes skin irritation.

H319 Causes serious eye irritation. H335 May cause respiratory irritation.

H336 May cause drowsiness or dizziness. H360 May damage fertility or the unborn child. H371 May cause damage to organs.

H412 Harmful to aquatic life with long lasting effects.

**Precautionary statement(s)**

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking. P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge. P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product. P271 Use only outdoors or in a well-ventilated area.

P273 Avoid release to the environment.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P311 IF exposed or concerned: Call a POISON CENTER or doctor/ physician. P308 + P313 IF exposed or concerned: Get medical advice/ attention.

P332 + P313 If skin irritation occurs: Get medical advice/ attention. P337 + P313 If eye irritation persists: Get medical advice/ attention. P362 Take off contaminated clothing and wash before reuse.

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish. P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P403 + P235 Store in a well-ventilated place. Keep cool. P405 Store locked up.

P501 Dispose of contents/ container to an approved waste disposal plant.

**Hazards not otherwise classified (HNOC) or not covered by GHS - none**

**Acute Effects**

**Eye:** Causes eye irritation.

**Skin:** Causes skin irritation. May be harmful if absorbed through the skin.

**Ingestion:** May cause irritation of the digestive tract.

**Inhalation:** Harmful if inhaled. Causes respiratory tract irritation. May cause liver damage. Inhalation of vapors may cause drowsiness and dizziness.

**Chronic:** Chronic inhalation and ingestion may cause effects similar to those of acute inhalation and ingestion. There are not enough human data on 1-bromopropane to determine whether the chemical has harmed human reproduction and development. However, research on lab rats show 1-bromopropane can damage reproduction and development in that animal. Effects, such as a lengthened estrous (reproductive) cycle, occurred when female rats inhaled 1-bromopropane at concentrations of 250 ppm.

**Medical Conditions Aggravated by Long-Term Exposure:**

## SECTION 3 — COMPOSITION/INFORMATION ON INGREDIENTS

| CAS#     | Chemical Name    | Percent | EINECS/ELINCS |
|----------|------------------|---------|---------------|
| 106-94-5 | n-Propyl bromide | ≥99     | 203-445-0     |
| 106-88-7 | 1,2-Epoxybutane  | ≤1      | 203-438-2     |

### Appearance/General Info:

| Chemical Name    | ACGIH       | NIOSH       | OSHA - Final PELs |
|------------------|-------------|-------------|-------------------|
| n-Propyl bromide | None listed | None listed | None listed       |
| 1,2-Epoxybutane  | None listed | None listed | None listed       |

## SECTION 4 — FIRST AID MEASURES

**Eyes:** Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

**Skin:** Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

**Ingestion:** If swallowed, get medical aid immediately. Only induce vomiting if directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

**Inhalation:** Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

**Notes to Physician:** Treat symptomatically and supportively.

*After first aid, get appropriate in-plant, paramedic, or community medical support.*

## SECTION 5 — FIRE FIGHTING MEASURES

**Flash Point:** 21° C (69.80° F)

**Autoignition Temperature:** 490 °C ( 914.00 °F)

**LEL:** 4.0 vol%

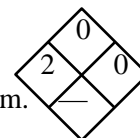
**UEL:** 7.9 vol %

**Extinguishing Media:** Use water spray, dry chemical, carbon dioxide, or appropriate foam.

**Hazardous Combustion Products:** Irritating and toxic fumes and gases.

**Fire-Fighting Equipment:** Wear a self-contained breathing apparatus (SCBA) with a full face-piece operated in pressure- demand or positive-pressure mode.

NFPA



## SECTION 6 — ACCIDENTAL RELEASE MEASURES

**Spill/Leak Procedures:** Eliminate all ignition sources. Ventilate area.

**Small Spills:** Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation.

**Large Spills**

**Containment:** For large spills, dike far ahead of spill for later disposal. Do not release into sewers or waterways.

**Cleanup:** Clean up spills immediately, observing precautions in the Protective Equipment section.

**Regulatory Requirements:** Follow applicable OSHA regulations (29 CFR 1910.120).

## SECTION 7 — HANDLING AND STORAGE

**Handling Precautions:** Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation.

**Storage Requirements:** Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

## SECTION 8 — EXPOSURE CONTROLS AND PERSONAL PROTECTION

### Engineering Controls:

**Ventilation:** Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs (Sec. 2). Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

### Administrative Controls:

**Respiratory Protection:** Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. For emergency or non-routine operations (cleaning spills, reactor vessels, or storage tanks), wear an SCBA. Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres. If respirators are used, OSHA requires a written respiratory protection program that includes at least: medical certification, training, fit-testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.

**Protective Clothing/Equipment:** Wear chemically protective gloves, boots, aprons, and gauntlets to prevent prolonged or repeated skin contact. Wear protective eyeglasses or chemical safety goggles, per OSHA eye- and face-protection regulations (29 CFR 1910.133). Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses.

**Safety Stations:** Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area. Contaminated Equipment: Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment.

**Comments:** Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

## SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid  
Color: clear, colorless  
Odor: pleasant odor

Viscosity: 0.52 mPa.s @ 20 °C  
Boiling Point: 71 °C @ 760 mm Hg ( 159.80°F)  
Freezing/Melting Point: -110 °C ( -166.00°F)

pH: Not available  
Vapor Pressure: 146 mm Hg @ 20 °C  
Vapor Density: 4.34 (air=1)  
Evaporation Rate: Not available

Decomposition Temperature: Not available  
Solubility in water: 2.5 g/l (20°C)  
Specific Gravity/Density: 1.353 g/ml  
Molecular Formula: C<sub>3</sub>H<sub>7</sub>Br  
Molecular Weight: 122.99

## SECTION 10 — REACTIVITY AND STABILITY DATA

**Stability:** n-Propyl bromide is stable at room temperature in closed container under normal storage and handling conditions.

**Polymerization:** Hazardous polymerization has not been reported.

**Chemical Incompatibilities:** Strong oxidizing agents, aluminum, zinc, excess heat.

**Conditions to Avoid:** Incompatible materials, excess heat, strong oxidants.

**Hazardous Decomposition Products:** Thermal oxidative decomposition of n-Propyl bromide can produce carbon monoxide, carbon dioxide, hydrogen bromide

## SECTION 11 — TOXICOLOGICAL INFORMATION

Inhalation, mouse: LC<sub>50</sub> = 7100 mg/m<sup>3</sup>;  
Inhalation, rat: LC<sub>50</sub> = 253 gm/m<sup>3</sup>/30M;  
Inhalation, rat: LC<sub>50</sub> = 19700 mg/m<sup>3</sup>;  
Oral, mouse: LD<sub>50</sub> = 4700 mg/kg;  
Oral, rat: LD<sub>50</sub> = 3600 mg/kg;

Epidemiology: No information available.  
Teratogenicity: No information available.  
Reproductive Effects: No information available  
Neurotoxicity: No information available.  
Mutagenicity: No information available.

\* See NIOSH, RTECS(TX4110000 ), for additional toxicity data.

## SECTION 12 — ECOLOGICAL INFORMATION

**Ecotoxicity:** Fish: Fathead Minnow: 67.3 mg/l; 96H; LC<sub>50</sub>

Daphnia: Daphnia: 208.9 mg/l; 24H; EC<sub>50</sub>.

**Environmental:**

**Physical:** No information found.

## SECTION 13 — WASTE DISPOSAL

**Disposal:** Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, state, and local regulations.

**Disposal Regulatory Requirements:**

**Container Cleaning and Disposal:**

## SECTION 14 — TRANSPORTATION INFORMATION

### NOT REGULATED FOR TRANSPORTATION IN THE USA

|  |  |
|--|--|
| <b>US DOT(49 CFR 172.101):</b><br><b>UN-No:</b><br><b>Proper Shipping Name: Hazard Class:</b><br><b>Packing Group:</b> |  |
|--|--|

### REGULATED FOR TRANSPORTATION INTERNATIONALLY

|   |  |
|---|--|
| <b>US DOT (49 CFR 172.101):</b><br><b>UN-No: UN2344</b><br><b>Proper Shipping Name: Bromopropanes</b><br><b>Hazard Class: 3</b><br><b>Packing Group: II</b> | <b>IATA</b><br><b>UN-No: UN2344</b><br><b>PSN: Bromopropanes</b><br><b>Hazard Class: 3</b><br><b>Packing Group: II</b>     |
| <b>TDG</b><br><b>UN-No: UN2344</b><br><b>PSN: Bromopropanes</b><br><b>Hazard Class: 3</b><br><b>Packing Group: II</b>                                       | <b>IMDG/IMO</b><br><b>UN-No: UN2344</b><br><b>PSN: Bromopropanes</b><br><b>Hazard Class: 3</b><br><b>Packing Group: II</b> |

## SECTION 15 — REGULATORY INFORMATION

#### **US Federal Information:**

TSCA: All listed ingredients appear on the Toxic Substances Control Act (TSCA) inventory. CERCLA Reportable Quantity (RQ) (40 CFR 117.302): 1,2-Epoxybutane (100 lbs / 45.4 kg)

SARA TITLE III: Sec. 302, Extremely Hazardous Substances, 40 CFR 355: No Extremely Hazardous Substances are present in this material.

SARA TITLE III: Sec. 311 and 312, MSDS Requirements, 40 CFR 370 Hazard Classes: Immediate (Acute) health hazard; Chronic Health Hazard. Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds for the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SARA TITLE III: Sec. 313, Toxic Chemicals Notification, 40 CFR 372: This material may be subject to the SARA notification requirements, since it contains Toxic Chemical constituents. This product contains 1,2-Epoxybutane.

#### **US State Right to Know Laws:**

California Proposition 65: This product contains a chemical known to the State of California to cause cancer and/or reproductive harm. This product contains: 1-Bromopropane.

Other U.S. State "Right to Know" Lists: The following chemicals are specifically listed by individual States: 1-Bromopropane (MA, MN, PA); 1,2-Epoxybutane (CA, MA, MN, NJ, PA, RI); n-propanol (CA, MA, MN, NJ, PA, RI).

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

**International Information:**

**This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.**

## SECTION 16 — OTHER INFORMATION

**Prepared by:** Albatross USA Inc.

**Telephone number:** 718-392-6272

**Preparation Date:** March 5, 2004

**Revision Date:** 08/10/15

**Disclaimer:** All information, recommendations and suggestions appearing herein are based upon sources believed to be reliable: However, it is the users responsibility to determine the safety, toxicity and suitability for its own use of this product. Albatross USA Inc DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE USE BY OTHERS OF THIS PRODUCT.