SAFETY DATA SHEET

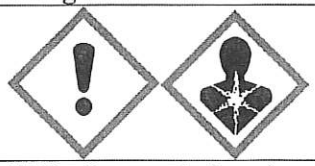
ENTRON-AERO®

Boeing BAC 5408 Vapor Degreasing Solvent

1. Product and Company Information:

Product Name: ENTRON-AERO
Chemical Family: Alkyl Bromide
Product General Use: Non-Flammable Vapor Degreasing Solvent
Manufacturer: Reliance Specialty Products, Inc.,
154 Easy Street, Carol Stream, Illinois 60188
Ph. 847-640-8923 www.relspec.com
Emergency Telephone Number: **24 HOUR EMERGENCY RESPONSE: (VelocityEHS)**
USA and CANADA: Ph. (800) 255-3924
Non-Emergency Telephone Number: Reliance Technical Support Dept. at 847-640-8923

2. Hazards Identification

GHS Classification	Carc. Cat. 2, H351: Suspected of causing cancer Repr.1B, H360Fd: May damage fertility. Suspected of damaging the unborn child STOT RE2, H373 May cause damage to the liver and the central nervous system through prolonged or repeated exposure Skin Irrit. 2, H315: Causes skin irritation Eye Irrit. 2, H319: Causes serious eye irritation STOT SE 3, H335: May cause respiratory irritation STOT SE 3 H336: May cause drowsiness or dizziness Aquatic Chronic 3, H412: Harmful to aquatic life with long lasting effects
Signal Word	**Danger**
Symbol	
Hazard Statements	H351: Suspected of causing cancer H360Fd: May damage fertility. Suspected of damaging the unborn child H372: May cause damage to the liver and the central nervous system though prolonged or repeated exposure H315: Causes Skin Irritation H319: Causes serious eye irritation H335: May cause respiratory irritation H336: May cause drowsiness or dizziness H412: Harmful to aquatic life with long lasting effects.
Precautionary Statements	P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking P260: Do not breathe dust/fume/gas/mist/vapors/spray P280: Wear protective gloves/protective clothing/eye protection/face protection P273: Avoid release to the environment P370 + P378: In case of fire: Use carbon dioxide, dry chemical powder, alcohol foam or polymer foam for extinction P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing P304: Call a POISON CENTER or doctor/physician if you feel unwell P403 + P233: Store in a well-ventilated place. Keep container tightly closed

	P501: Dispose of contents/container in accordance with national and international regulations P202: Do not handle until all safety precautions have been read and understood P264: Wash hands thoroughly after handling P271: Use only outdoors or in a well-ventilated area P302 + P352 IF ON SKIN: Wash with plenty of soap and water P362 + P364: Take off all contaminated clothing an wash it before reuse
California Proposition 65 Warning	WARNING! This product can expose you to 1-Bromopropane (1-BP, n Propyl Bromide, CAS 106-94-5) which is known to the State of California to cause cancer and which is known to the State of California to cause birth defects or other reproductive harm.

Occupation Exposure Limits: See Section 8 of this SDS
Additional Toxicological Information: See Section 11 of this SDS

3. Composition and Ingredient Information

Component	CAS Number	Weight Percentage
n Propyl Bromide (stabilized) (synonym: 1-Bromopropane)	106-94-5	>90.0%
1,2 Butylene Oxide (synonym: 1,2 Epoxybutane)	106-88-7	<2.0%
Proprietary Components - Trade Secret	N/A	<8.0%

4. First Aid Measures

Eye contact: Holding the eyelids apart, flush eyes promptly with copious flowing water for at least 20 minutes. Get medical attention immediately.
Skin contact: Remove contaminated clothing. Wash skin thoroughly with mild soap and plenty of water for at least 15 minutes. Wash clothing before reuse. Get medical attention immediately.
Inhalation: In case of mist inhalation or breathing fumes released from heated material, remove person to fresh air. Keep him quiet and warm. Apply artificial respiration if necessary and get medical attention immediately.
Ingestion: If swallowed, wash mouth thoroughly with plenty of water. Get medical attention immediately.

NOTE: Never give an unconscious person anything to drink

Most important symptoms and effects of short term overexposure:
Eye: Causes serious eye irritation
Skin: Causes skin irritation
Inhalation: May cause respiratory irritation. May cause drowsiness or dizziness
Ingestion: Large doses or repeated intake of bromides may affect the central nervous system.
Symptoms of short-term overexposure: Symptoms of short-term overexposure may include drowsiness, dizziness, muscular incoordination and respiratory depression.

5. Fire Fighting Measures

FLASH POINT:
NONE by ASTM D-56 TC
NONE by ASTM D-92 COC
NONE by ASTM D-93 TCC
FLAMMABLE LIMITS: 3.0 to 9.0% by volume in air
AUTO-IGNITION TEMPERATURE: 490° C
Extinguishing Media: Use dry chemical, chemical foam, or carbon dioxide as dictated by the surrounding circumstances.
Special Fire Fighting Procedures: Wear NIOSH approved self-contained breathing apparatus (set on positive pressure mode) and personal protective equipment. Avoid skin and eyes contact in fire situations.

Unusual Fire and Explosions Hazard: In fires, toxic and corrosive gases may be released. Vapor will form a flammable mixture in a narrow concentration range of 3.0% to 9.0% by volume in air.

6. Accidental Release Measures

Contain spillage or leakage with dikes or absorbent material to prevent migration into sewer or waterway. Absorb spill with an inert material and place in a chemical waste container for disposal. For large spills, evacuate and ventilate the area. Wear self-contained breathing apparatus and recommended personal protective equipment. Observe government regulations.

7. Handling and Storage

Store in well ventilated, cool, dry area. Store in original container only. Keep container closed when not in use. Minimize introduction of water or moisture into the product.

8. Exposure Controls and Personal Protection

Component	Weight Percentage	Workplace Exposure Limits / Recommendations
n Propyl Bromide (stabilized) CAS No. 106-94-5 (synonym: 1-Bromopropane)	>90.0%	**US FEDERAL:** OSHA PEL: Not Established OSHA STEL/ Ceiling: Not Established US EPA SNAP Program: 18 to 25 ppm **NON-GOVERNMENTAL** ACGIH TLV: A3, 0.10 ppm ACGIH TLV-STEL: None **CALIFORNIA** California OSHA PEL: 5 ppm
1,2 Butylene Oxide CAS No. 106-88-7 (synonym: 1,2 Epoxybutane)	<2.0%	**US FEDERAL:** OSHA PEL: Not Established OSHA STEL/Ceiling: Not Established US EPA SNAP Program: Not Applicable **NON-GOVERNMENTAL** ACGIH TLV: None ACGHI TLV-STEL: None
Proprietary Components - Trade Secret	<8.0%	**US FEDERAL:** OSHA PEL: 100 ppm OSHA STEL/Ceiling: Not Established US EPA SNAP Program: Not Applicable **NON-GOVERNMENTAL** ACGIH TLV: 20 ppm ACGHI TLV-STEL: None (Note: The least favorable Workplace Exposure Limits/Recommendations of all of the proprietary components is reported above).

RESPIRATORY PROTECTION: Use NIOSH approved organic vapor respirator if ventilation is not sufficient. Of particular concern is when filling, emptying, operating or maintaining your cleaning equipment and at other instances where there is a likelihood of inhalation of solvent vapors.

VENTALATION AND PROPER EQUIPMENT CONTROLS: Exposure to the product can be minimized through use of appropriate ventilation and emission controls and proper equipment maintenance.

CLOTHING/GLOVES: Wear safety glasses. Use of gloves is recommended. Viton or Silvershield gloves offer the best extended protection. Nitrile, neoprene, or butyl gloves offer less protection and should be used for incidental splash protection only. DO NOT use natural rubber gloves when handling this product.
EYE PROTECTION: Always wear safety goggles or full face shield.
WORK/HYGIENIC PRACTICES: Do not eat, drink, or smoke while working with this product. Launder soiled clothes. Provide emergency eye bath and safety shower.

9. Physical Properties

FLASH POINT: NONE by ASTM D-56, D-92 and D-93
FLAMMABLE LIMITS: 3.0 to 9.0% by volume in air
AUTO-IGNITION TEMPERATURE: 490° C
APPEARANCE: clear liquid
VAPOR PRESSURE: (mm Hg @ 25° C): 139
ODOR: Ether/Alcohol Like
RELATIVE VAPOR DENSITY: (Air =1): 4.3
pH: 6.5 to 7.5
SOLUBILITY IN WATER: Negligible (0.25 g/100ml)
MELTING POINT/FREEZING POINT: -110° C
BOILING POINT: (760 mm Hg): 160 °F (71 °C)
PARTION COEFFICIENT; N-OCTANOL/WATER: Not Determined
EVAPORATION RATE: (n-Butyl Acetate = 1): 4.5
DECOMPOSITION TEMPERATURE: Not Determined
VISCOSITY: cps at 25° C: 0.5
SPECIFIC GRAVITY: (25/25° C, H2O = 1): 1.26 to 1.31
REACTIVITY IN WATER: Not Readily Hydrolyzed

10. Stability and Reactivity

STABILITY: Stable under normal conditions.
CONDITIONS TO AVOID: Avoid open flame, electric arc and other high energy ignition sources. Prolonged contact with free water may result in diminished stabilizer and corrosion.
INCOMPATIBILITY: Incompatible with strong alkalis, oxidizers, bases, reactive metals and natural rubber.
HAZARDOUS DECOMPOSITION: Thermal decomposition produces carbon monoxide, carbon dioxide, and hydrogen bromide.
HAZARDOUS POLYMERIZATION: Will not occur.

11. Toxicological Information

n-Propyl bromide
LD50 Oral/Rat > 2,000 mg/kg
LD50 Dermal/Rat > 2000 mg/kg
LC50 Inhalation/Rat = 72,306 mg/m^3
Chronic Toxicity: Chronic or Prolonged over-exposure may cause adverse affects to the liver, kidneys, reproductive system and central nervous system
Reproductive: Male: BMDL of reduced sperm motility F0 at 282ppm - rat/inhalation*
Female: LOAEL of increased estrous cycle length at 250ppm -rat/inhalation*
*USEPA SNAP Proposal conclusions based on outcome of Wil (2001).
Mutagenicity: Not mutagenic by the Ames Test
Carcinogenicity: IARC: 2B (animal sufficient evidence, human limited evidence)
ACGIH: A3 – Animal carcinogen with unknown relevance to humans
NTP: Reasonably anticipated to be a human carcinogen
Teratogenicity: NOEL is 100 ppm for maternal and fetal toxicity and for teratogenicity is 996 ppm (inhalation, rat, 6h/day, gestation day 6-19)

1,2 Butylene Oxide
LD50 Oral/Rat = 1,180 mg/kg
LD50 Dermal/Rabbit = 1,760 mg/kg
LC50 Inhalation/Rat = 6,300 mg/m^3 – 4 hours

Carcinogenicity: IARC: 2B

Symptoms of Over-exposure:

Short Term Over-exposure: Symptoms of short-term overexposure may include drowsiness, dizziness, muscular incoordination and respiratory depression.

Long Term/ Chronic Over-exposure: Long term chronic over-exposure may cause adverse effects in the liver, respiratory system, kidney, reproductive system and central nervous system.

12. Ecological Information

Ozone Depletion Potential (ODP): The ODP of n-propyl bromide has been determined to be in the range of 0.006 to 0.013

Aquatic Toxicity: 96 Hour-LC50 Fish, 23.3 mg/l (rainbow trout)
48 Hour – EC50, Daphnia magna 99.3 mg/l

Mobility: Due to low affinity to soil and sediment (low Koc), expected to be mobile in soil

Persistence and degradability: Not readily biodegradable. n Propyl Bromide was shown to degrade in water by hydrolysis with a half-live of 562 hours (23.4 days).

Bio-accumulative Potential: Predicted BCF's are significantly below 2000, indicating a negligible potential for bioaccumulation or subsequent bio-magnification in the food chain.

13. Disposal Considerations

Follow all Federal, State and Local governmental regulations. DO NOT flush into sanitary sewer or waterway.

14. Transportation Information

UN Number: None

CLASSIFICATION:

DOT AND USPS: Not currently regulated for transportation

PLEASE NOTE CONCERNING CLASSIFICATION: The recent inclusion of the component n Propyl Bromide on January 5, 2022 as a Hazardous Air Pollutant regulated under NESHAP may result in a change in the classification of this product for purposes of transportation. The current regulations should be checked for any changes in the classification for purposes of shipping.

IMDG: Not Regulated (SP223)

ICAO/IATA: Not Regulated (SP A3)

PROPER SHIPPING NAME: Cleaning Solvent Mixture

15. Regulatory Information

TSCA: All of the components of this product are in the EPA TSCA inventory.

NESHAP / HAZARDOUS AIR POLLUTANT (HAP): n Propyl Bromide was included by the USEPA as a "Hazardous Air Pollutant" (HAP) regulated under NESHAP on January 5, 2022 with specific requirements to be promulgated in a separate Rulemaking/Announcement by the USEPA in the future. As of the time of issuance of this SDS, such USEPA Rulemaking/Announcement has not been issued.

RCRA: N/A at time of this SDS. The recent determination of the USEPA of n Propyl Bromide may lead to the regulation of the product as a RCRA hazardous material. Check current regulations for RCRA status changes.

EPCRA Section 313: – The following component is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372) This information must be included in all SDSs that are copied and distributed for this material.

CAS Number	Component	Weight Percentage
106-94-5	n Propyl Bromide (stabilized) (synonym: 1-Bromopropane)	96.0%
106-88-7	1,2 Butylene Oxide (synonym: 1,2 Epoxybutane)	1.0%

SARA: Section 304 (RQ): None of the components have a RQ
Section 302 (TPQ): None of the Components have a TPQ
CERCLA: RQ of 100 lbs. for 1,2, Butylene Oxide (CAS 106-88-7), Note: that an RQ of 100 lbs at the component's weight % in composition requires approximately 1,500 gallons of the ENTRON-AERO mixture to reach RQ's threshold.
USEPA SNAP PROGRAM:

- **FINAL USE APPROVAL:** USEPA SNAP Program Final Approval was received in May 2007 for use in Metal Cleaning, Electronics Cleaning and Precision Cleaning.
- **INTERIM USE AUTHORIZATION:** USEPA SNAP Program interim authorization for use in the Use Sectors in Carriers, Adhesive Carriers and Aerosols was issued in 2003 pending a final determination by the SNAP Program for continued use in those Use Sectors.

EEC (EINECS): Ingredients Listed
CANADA (DSL): Ingredients Listed
CALIFORNIA PROPOSITION 65: WARNING! This product can expose you to 1-Bromopropane (1-BP, n Propyl Bromide, CAS 106-94-5) which is known to the State of California to cause cancer and which is known to the State of California to cause birth defects or other reproductive harm.
STATE REGULATION: Right-to-Know Hazardous Substances List: CA, MA, NJ, PA

16. Other Information

HMIS RATING (Scale 0 to 4):

	HMIS
Health	2
Flammability	1
Physical Hazards	0

***Chronic Hazard (Long-term health effects may result from repeated overexposure.)**
0= Minimal Hazard, 1= Slight Hazard, 2= Moderate Hazard, 3 = Serious Hazard, 4= Severe Hazard

Reliance Specialty Products, Inc.'s offers the information and opinions contained in this Safety Data Sheet as a guide to the physical characteristics and use of this Product and believe it to be accurate as of the date of this document. However, it is the responsibility of the user to establish the suitability of the Product for their particular application and to establish the conditions for safe use of the product and compliance with all applicable laws and regulations. Reliance Specialty Products, Inc. disclaims all warranties, express or implied, including merchantability, fitness for a particular purpose or of any other nature in connection with the opinions and information contained herein and the use of the Product.

END OF SDS