

## MATERIAL SAFETY DATA SHEET

### EUROPEAN VERSION IN COMPLIANCE WITH DIRECTIVE 91/155/EC

#### 1. IDENTIFICATION OF SUBSTANCE

*ECOMAX*<sup>TM</sup> Vapour degreasing and cleaning solvent.

#### 2. COMPOSITION AND INFORMATION ON INGREDIENTS

MAJOR COMPONENT	CAS NO	EC NO	Weight%
n-Propyl bromide	106-94-5	203-445-0	> 95%

#### 3. HAZARDS IDENTIFICATION

R20 – Harmful by inhalation

**Emergency Overview :** *ECOMAX*<sup>TM</sup> has no flash point, but vapors will form a flammable mixture at a concentration of 4.6% to 8.5% by volume with air. Vapors may be irritating to eyes, skin and respiratory tract. Not expected to be acutely toxic.

##### **SYMPTOMS / EFFECTS OF OVEREXPOSURE**

**Inhalation:** May irritate the nose, throat, and lungs. Exposure to high doses may cause central nervous system depression (anaesthetic-like effects). Doses which cause anaesthetic-like effects may also cause adverse effects in liver, lung, and kidney.

**Ingestion:** Low order of toxicity. May cause nausea and abdominal discomfort

**Skin:** Prolonged exposure may cause a skin irritation.

**Eyes:** Contact with eyes may cause mild irritation.

#### 4. FIRST AID MEASURES

**Inhalation:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Consult a physician.

**Ingestion:** Do not induce vomiting. Seek medical attention.

**Skin:** Remove contaminated clothing. Thoroughly wash affected area with soap and water and use skin cream if irritation is severe.

**Eyes:** Immediately flush eyes with water for 15 minutes. Call a physician if irritation persists.

**5. FIRE FIGHTING MEASURES**

**Extinguishing Media:** Dry chemical, chemical foam, carbon dioxide. Class BC, ABC fire extinguisher.

**Special Fire Fighting Procedures:** Wear a self-contained breathing apparatus and personal protective equipment to avoid skin and eyes contact in fire situations.

**Unusual Fire and Explosions Hazard:** In fires, toxic and corrosive gases may be released.

**6. ACCIDENTAL RELEASE MEASURES**

Evacuate area

Wear suitable protective clothing including eye/face protection and gloves (S36,37,39).

Absorb spill with inert material, then place in chemical waste container.

For large spills, dyke for later disposal observe local and national regulations.

**7. HANDLING AND STORAGE**

Store in original container, preferably in a cool ventilated location.

Avoid overheating or freezing.

Avoid open flames and sparks.

Since empty containers may retain product residues (vapor, liquid, or solid) all label precautions must be observed.

Avoid contact with skin and eyes (S24/25)

Do not eat, drink, or smoke when using product (S51)

Do not breathe vapour (S23)

**8. EXPOSURE CONTROLS - PERSONAL PROTECTION**

**Exposure limits:** EnviroTech International Inc recommends a workplace exposure Guideline of 100ppm/8hour TWA ( Time weighted Average) based on scientific assessment of nPB and other relevant toxicological data.

**Respiratory:** Use approved respirator if ventilation is not sufficient and if mists are generated.

**Ventilation:** If desirable to reduce odor, local exhaust can also be effective in minimizing odor. Provide sufficient ventilation to maintain emissions below recommended exposure limits.

**Clothing/Glove:** Chemically resistant gloves should be used with all industrial chemicals. Viton or Silver Shield Gloves are preferred.

**Eye Protection:** Always wear safety glasses or goggles. Provide eye bath near work site.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance: Clear Colorless liquid

Boiling Point (760 mm Hg) 70°C

Vapor Density (Air = 1): >1

% Volatile (By weight): 100

Evaporation Rate (ButAc. = 1): < 1

Specific Gravity (H<sub>2</sub>O =1): 1.33 @ 25°C

Solubility in Water: Negligible

Reactivity with Water: Not readily Hydrolyzed

Vapor Pressure (25°C): > 139 mm Hg

Flash Point: None (ASTM D93 TCC)

Flammable Limits: (% By Volume in Air): 4.6% to 8.5%

**10. STABILITY AND REACTIVITY**

**Stability:** *ECOMAX*<sup>TM</sup> is stable.

**Conditions to Avoid:** Storage temperatures above the boiling point (70C).

Operating temperatures above 85C and decomposition temperatures above 205C.

**Incompatibility:** Strong mineral acids and strong oxidizing agents.

Prolonged contact with aluminum, magnesium, and zinc metals should be avoided.

**Hazardous Decomposition:** Thermal decomposition products are known to be hazardous.

**Hazardous Polymerization:** Will not occur.

**11. TOXICOLOGICAL INFORMATION**

n-Propyl bromide:	LD50/oral/rat = 4,260 mg/kg LC50/rat = 14,000 ppm/ 4hr.
1,2 epoxybutane:	LD50/oral/rat = 500 mg/kg LD50/dermal/ rabbit = 2,100 mg/kg LC50/inhalation/rat = 4,000 ppm/ 4hr.
2-Methyl-2-propanol:	LD50/oral/rat = 3,500 mg/kg
Dimethoxymethane:	LC50/rat = 15,000 ppm

**12. ECOLOGICAL INFORMATION**

Not readily soluble in water

Low bioaccumulation potential.

Short atmospheric lifetime. Very low ODP.

Not readily biodegradable.

**13. DISPOSAL CONSIDERATIONS**

Waste treatment or incinerate used material in compliance with all applicable European, national or local regulations. DO NOT flush into sewers or waterways. Surplus or waste products should be classified in accordance with EU Directive 91/689/EEC

**14. TRANSPORT INFORMATION**

Not classified as hazardous for transport.

**15. REGULATORY INFORMATION**

This Safety Data Sheet is provided in compliance with EU Directive 91/155/EC and is based on current knowledge.

<b>Health effect or</b>	
<b>Physio/Chemical classification</b>	HARMFUL Xn
<b>Named Substance</b>	1- Bromopropane ( <i>n</i> -Propyl Bromide)
<b>Risk Phrases</b>	R20 – Harmful by inhalation
<b>Safety Phrases</b>	S20/21 – When using do not eat, drink, or smoke S23 – Do not breathe vapour S24/25 – Avoid contact with skin and eyes S36/37/39 – Wear suitable protective clothing, protection for face and eyes and gloves

**16. OTHER INFORMATION**

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