SAFETY DATA SHEET

1. Identification of the substance/mixture and of the company

1.1 Product identifier

Product Name: Type TR™
Cleaner/Degreaser – Aerosol

Product ID numbers: TR-16

1.2 Relevant identified uses of the mixture and uses advised against

Identified uses: Electrical Cleaner/Degreaser

List of advices against: Not applicable.

1.3 Details of the supplier of the safety data sheet

Supplier/Manufacturer:

American Polywater Corporation
11222 - 60th Street North
Stillwater, MN 55082 USA
Tel: 1-651-430-2270
Email: sds@polywater.com

1.4 Emergency telephone numbers

INFOTRAC 1-352-323-3500 (USA)

2. Hazards Identification

2.1 Classification of the substance or mixture

Classification according to USA OSHA 29 CFR 1910.1200 (2012) and Canada HPR (SOR/2015-17; WHMIS 2015).

Flam Aerosol 2	H223, H229
Gas under pressure, liquefied gas	H280
Skin Irrit. 2	H315
Eye Dam 1	H318
Carc 2	H351
Rep. Tox. 1B	H360
STOT RE 2 (Liver, Central Nervous System)	H373
STOT SE 3 (Respiratory system, Central Nervous System)	H335, H336

2.2 Label elements

This product is intended for consumer use and is labeled according to CPSC guidelines and not to GHS guidelines listed below. It is safe for consumers and other users under normal and reasonably foreseeable use. The SDS contains valuable information for industrial workplace conditions.

Contains: 1-bromopropane, n-propyl alcohol, ,2-epoxybutane

Pictograms:

Signal word: Danger

Hazard Statements:

H223	Flammable aerosol
H229	Pressurized container, may burst if heated

H280	Contains gas under pressure; may explode if heated
H315	Causes skin irritation.
H318	Causes serious eye irritation
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H360	May damage fertility or the unborn child.
H373	May cause damage to the liver and central nervous system through prolonged or repeated exposure

Precautionary Statements:

P210	Keep away from sparks, flames and hot surfaces. No smoking.
P242	Use only non-sparking tools.
P251	Do not pierce or burn, even after use.
P260	Do not breathe vapor.
P264	Wash hands thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves and eye protection.
P303 + P361 + P353	IF ON SKIN: Take off immediately all contaminated clothing. Rinse skin with water.
P332 + P313	If skin irritation occurs: Get medical attention.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical attention
P308 + P313	If exposed or concerned: Get medical advice.
P370 + P378	In case of fire: Use water fog, foam, dry chemical or carbon dioxide for extinction.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P410 + P412	Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.
P501	Dispose of contents/container in accordance with local and national regulations.

2.3 Other hazards: No information available.

3. Composition/Information on Ingredients

Component	CAS #	EC #	Wt. %
1-bromopropane	106-94-5	203-445-0	95-100%
Stabilizers	proprietary		<5%
1,2 epoxy butane	106-88-7		<1%

4. First Aid Measures

4.1 Description of first aid measures

Eye Contact: If eye irritation from exposure to vapors develops, move to fresh air. Flush eyes with clean water. If irritation persists, seek medical attention. For direct eye contact, flush with large quantity of water for 15 minutes. Seek medical attention.

Skin Contact: Remove contaminated clothing; flush skin thoroughly with water. If irritation occurs, seek medical attention.

Inhalation (Breathing): If irritation of nose or throat develops, move to fresh air. If irritation persists, seek medical attention. If breathing is difficult, provide oxygen. If not breathing, give artificial respiration. Seek immediate medical attention.

Ingestion (Swallowing): Do not induce vomiting or give anything by mouth. If victim is drowsy or unconscious, place on the left side with head down. Do not leave victim unattended. Seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Refer to Section 11 for more information.

4.3 Indication of immediate medical attention and special treatment needed.

No data available

5. Firefighting Measures

5.1 Extinguishing media:

Carbon dioxide, water fog, dry chemical or foam.

5.2 Special hazards arising from the substance or mixture

Vapors are heavier than air and may travel considerable distances.

Hazardous decomposition and by-products:

Include hydrogen bromide, bromine, oxides of carbon

5.3 Advice for firefighters

Wear appropriate, protective clothing, including self-contained, positive pressure or pressure-demand breathing apparatus. Sealed container can build up pressure when exposed to high heat. Use water spray to cool fire exposed containers. Aerosol cans can build up pressure and explode when exposed to temperatures greater than 120°F (49°C).

Special Note:

Many data bases (OSHA, DOT, EPA, ESIS) list 1-bromopropane as highly flammable. Flash point testing has produced variable results, including no flashpoint to boiling.

6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures:

Keep away from heat/sparks/open flames/hot surfaces. No smoking. For a spill in a confined space, provide mechanical ventilation to disperse or exhaust vapors. For emergency responders: use respiratory protection: half-face or full-face respirator with filter(s) for organic vapor for spills in a confined space. Chemical goggles are recommended if splashes or contact with eyes is possible. For small spills: normal antistatic work clothes are usually adequate.

6.2 Environmental precautions:

Avoid release to the environment. Dyke the spill to prevent entry into waterways, sewers, basements or confined areas.

6.3 Methods materials for containment and cleaning up:

Absorb spill with sand or absorbents. Collect as much of the spilled material as possible using non-sparking tools and transfer to a container. Seal the container. Remember, adding an absorbent material does not change the toxicity or flammability hazard.

6.4 Reference to other sections:

Refer to Sections 4, 5, 8, and 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Keep away from heat/sparks/open flames/hot surfaces. No smoking. Avoid breathing vapors or spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Wash contaminated clothing before reuse. Use only outdoors or in a well-ventilated area. For industrial or professional use only.

7.2 Conditions for safe storage, including incompatibilities

Do not expose container to direct sunlight or temperatures above 120°F (49°C). Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store away from acids and oxidizing agents.

7.3 Specific end uses

See technical data sheet on this product for further information.

8. Exposure Controls / Personal Protection

8.1 Control parameters

Exposure limits and recommendations:

Component Name	Limit	Standard	Source/Note
1-bromopropane	0.1 ppm	ACGIH, TWA	Liver & embryo/fetal dam. A3
1-bromopropane	Not Established	OSHA, OEL	
n-propanol	100 ppm	ACGIH TWA	
n-propanol	500 mg/m^3	OSHA PEL	
n-propanol	200 ppm	OSHA PEL	
n-propanol	250 ppm	OSHA STEL	
1,2-epoxybutane	Not Established	OSHA, OEL	
1,2-epoxybutane	Not Established	OSHA, OEL	

8.2 Exposure controls

Respiratory protection:
Provide ventilation or other engineering controls to keep vapor accumulation below acceptable limits. Avoid use in a closed environment without respiratory protection. If exposure exceeds recommended limits, respirator protection is recommended. Use a respirator or gas mask with cartridges for organic vapors (NIOSH approved) or use supplied air equipment.

Protective gloves:
The use of impermeable gloves is recommended to prevent drying and possible irritation. Use of chemically resistant gloves such as Nitrile for short-term exposure, or Viton or Silvershield for extended exposures is suggested.

Splash contact:
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Breakthrough time: 467 min
Material test: Vitoject® (viton)

Eye protection:
Eye protection is recommended, especially if the material is used in ways where it could spray or splash in the eyes.

Other protective equipment:
It is suggested that a source of clean water be available in work area for flushing eyes and skin. Impervious clothing should be worn as needed.

9. Physical and Chemical

9.1 Information of basic physical and chemical properties (bulk solvent unless noted)

Appearance:	Aerosol can with fast evaporating solvent.
Odor threshold:	Very low
pH:	Does not apply
Freezing point:	Not available
Boiling point:	160°F / 71°C
Flash point:	Not available (See Section 5)
Evaporation rate:	>2 (n-butyl acetate = 1)
Flammability (solid, gas):	Not applicable to liquids
Flammability limits:	Approximately 3.5 - 9% in air. **LEL**: 4.6%
Vapor pressure:	>140 mm Hg @ 20°C
Vapor density (Air = 1):	4.3

Specific gravity (H_2O = 1):	1.33
Solubility in water:	2.5 grams per liter
Coefficient of Water/Oil Distribution:	Not available
Auto-ignition temperature:	Approximately 3-8% in air.
Decomposition temperature:	Not available
Viscosity:	Not available

9.2 Other Information

Volatiles (Weight %):	100%
VOC Content:	1330 g/l

10. Stability and Reactivity

10.1 Reactivity:

See remaining headings in Section 10.

10.2 Chemical stability:

Stable

10.3 Possibility of hazardous reactions:

None known.

10.4 Conditions to avoid:

Avoid heat, flame or other hot surfaces that could cause thermal decomposition.

10.5 Incompatible materials :

Strong alkalis, oxidizers and reactive metals (i.e. potassium, sodium, etc.).

10.6 Hazardous decomposition products:

Thermal decomposition products include hydrogen bromide, bromine and oxides of carbon as well as oxides of nitrogen.

11. Toxicological Information

11.1 Information on toxicological effects:

Acute toxicity

Eye contact:

Direct eye contact may cause eye irritation. This irritation is minimal and expected to be transient.

Skin contact:

Prolonged or repeated skin exposure can remove oils, causing redness, drying and cracking. Persons with pre-existing skin disorders may be more susceptible to skin irritation from this material.

Irritation and Sensitization Potential:

Product may be irritating to skin and eyes. It is not a sensitizer.

Inhalation (Breathing):

Concentrated solvent vapors may cause irritation of the nose and throat. Prolonged exposure to excessively high vapor concentrations can result in central nervous system depression (e.g., drowsiness, dizziness, loss of coordination, and fatigue).

Ingestion:

Ingestion of large quantities may cause irritation of the digestive tract, nervous system depression (e.g., drowsiness, dizziness, loss of coordination, and fatigue).

Toxicity to Animals:

1-Bromopropane	LD_{50} (oral rat) 4,260 mg/kg
	LC_{50} (inhl rat) 253,000 mg/m^3, 30 min
1,2 epoxy butane	LD_{50} (oral rat) 1,600 mg/kg
	LC_{50} (inhl rat) 8,800 mg/m^3, 30 min

Aspiration hazard

No data available. This route of exposure is not expected with aerosol package.

Chronic Exposure:

Reproductive Toxicity:	May cause congenital malformation in the fetus. May damage the unborn child. Presumed human reproductive toxicant. May cause reproductive disorders. May damage fertility.
Mutagenicity:	No data available
Teratogenicity:	No data available
Specific Target Organ Toxicity (STOT)	Single exposure: May cause damage to organs. May cause respiratory irritation. May cause drowsiness or dizziness. Repeated exposure: No data available.
Toxicologically Synergistic Products:	Not available.
Carcinogenic Status:	This substance contains less than 1% 1,2 epoxy butane listed as IARC 2B, **"**Possibly carcinogenic to humans".

12. Ecological Information

12.1 Toxicity:

Ecotoxicity:	Large volumes may penetrate soil and contaminate groundwater.
Aquatic Toxicity:	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
1-Bromopropane	96 h LC_{50} Fathead Minnow (fish) 67.3 mg/l
	48 h EC_{50} Daphnia magna (water flea) 208.9 mg/l
12.2 Persistence and degradability:	Not readily biodegradable, result: 19.20%
12.3 Bioaccumulation potential:	No information available
12.4 Mobility in soil:	No information available
12.5 Results of PBT and vPvB Assessment:	This product is not, nor does it contain a substance that is a PBT or vPvB.
12.6 Other adverse effects:	None known.

13. Disposal Considerations

Dispose of product in accordance with National and Local Regulations.

14. Transport Information

UN Number:	1950
UN Proper shipping name:	AEROSOLS, Flammable, less than 1 liter each, Class 2.1, LTD QTY
Transport hazard class(es):	Class 9
Packing group:	Not Applicable
Environmental hazards:	None known
Special precautions:	None known
TDG:	Not Regulated
ICAO/IATA-DGR:	Consumer Commodity, ID 8000, Class 9, LTD QTY
IMDG:	UN 1950, AEROSOLS, Flammable, less than 1 liter each, Class 2.1, LTD QTY

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

USA Federal and State
All components are listed on the TSCA inventory.

Hazard Categories for SARA Section 311/312 Reporting	Acute	Chronic	Fire	Pressure	Reactive
	Yes	Yes	Yes	No	No

Components	CERCLA/SARA Sec 302 Hazardous Substance RQ	EHS TPQ	SARA Sec. 313 Toxic Release
1,2 epoxy butane (CAS# 106-88-7)	100 lbs.	No	1%

Type TR™ Cleaner/Degreaser Aerosol contains less than 1% 1,2 epoxy butane as a stabilizer. Any release of 100 lbs. or greater must be reported.

NFPA Ratings: Health: 2
Fire: 2
Reactivity: 0

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel during spill, fire or similar emergencies. Hazard ratings are based on physical and toxic properties of combustion or decomposition.

California Proposition 65
WARNING: This product can expose you to chemicals including 1-bromopropane which is known to the state of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.p65warnings.ca.gov.

European Union
All components are listed on the European Inventory of Existing Chemical Substances (EINECS).
Product complies with the communication requirements of REACH Regulation (EC) No. 1907/2006.

This material is on the Substances of Very High Concern (SVHC) list.

Canada
All components are listed on the DSL inventory.
This product has been classified according to the hazard criteria of the CPR and the SDS contains all the information required by the CPR.

WHMIS Classification: B2, D2A

Australia
All components are listed on the AICS.
Hazardous according to criteria of NOHSC Australia.

15.2 Chemical Safety Assessment
No chemical safety assessment has been carried out for the mixture by the supplier

16. Other Information

Abbreviations and acronyms:
OSHA = Occupational Safety and Health Administration
CLP = Classification, Labeling and Packaging Regulation
STOT = Specific Target Organ Toxicity
LD_{50} = Median Lethal Dose
DNEL = Derived No Effect Level
ACGIH = American Conference of Governmental Industrial Hygienists
TSCA = Toxic Substances Control Act (USA)
DSL = Domestic Substances List (Canada)
AICS = Australian Inventory of Chemical Substances

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Indication of Changes:	Section 3, 15 updated; format updates and additional California Proposition 65 information. Written in accordance with the provisions of OSHA 1910.1200 App D (2012) and Canada HPR (SOR/2015-17) (WHMIS 2015). (GHS format)

The information and recommendations contained herein are believed to be reliable. However, the supplier makes no warranties, express or implied, concerning the use of this product. The buyer must determine conditions of safe usage and assumes all risk and liability in handling this product.