SAFETY DATA SHEET

1. Product And Company Identification

SDS ID: SDS 042
PRODUCT NAME: Prestone® Hi-Temp Brake Fluid DOT 3
PRODUCT NUMBER: AS400, AS400Y, AS401, AS401Y, AS402, AS402-6, AS403, AS405, AS455
FORMULA NUMBER: 2075-28, 2075-36, 2276-69, 2396-88, 2482-138, 2488-67, 310, 345, 360, 436

MANUFACTURER:
Prestone Products Corporation
Danbury, CT 06810-5109

CANADIAN OFFICE:
FRAM Group (Canada), Inc.
Mississauga, Ontario L5L 3S6

MEDICAL EMERGENCIES AND ALL OTHER INFORMATION PHONE NUMBER:
(800)890-2075 (in the US)
(800)668-9349 (in Canada)
TRANSPORTATION EMERGENCY PHONE NUMBER (Chemical Spills and Transport Accidents only):
CHEMTREC 1-800-424-9300 (in the US)
CANUTEC (613)996-6666 (in Canada)
SDS DATE OF PREPARATION/REVISION: 05/05/2014

PRODUCT USE: Automobile brake fluid – consumer product
RESTRICTIONS ON USE: None identified

2. Hazards Identification

GHS/HAZCOM 2012 Classification:

Health	Physical
Acute Oral Toxicity Category 4 Eye Corrosion Category 1 Skin Irritant Category 2 Specific Target Organ Toxicity – Repeated Exposure Category 2	Not Hazardous

Label Elements

DANGER!
H302 Harmful if swallowed.
H315 Causes skin irritation
H318 Causes serious eye damage.
H373 May cause damage to kidneys, and liver through prolonged or repeated ingestion.

Prevention:
P260 Do not breathe mist or vapors.
P264 Wash exposed skin thoroughly after handling.
P270 Do not eat, drink, or smoke when using this product.
P280 Wear protective gloves, protective clothing, eye protection, or face protection.

Response:

P301 + P312 IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell.
P330 Rinse mouth.
P302 + P352 IF ON SKIN: Wash with plenty of water and soap.
P332 + P313 If skin irritation occurs: Get medical attention.
P362 Take off contaminated clothing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a doctor.
Disposal:
P501 Dispose of contents and container in accordance with local and national regulations.

The exact concentrations are a trade secret.

3. Composition/Information On Ingredients

Component	CAS No.	Amount
Triethylene glycol monobutyl ether	143-22-6	1-70%
Diethylene glycol	111-46-6	1-60%
Polyethylene glycol monomethyl ether	9004-74-4	0-50%
Triethylene glycol monoethyl ether	112-50-5	0-40%
Diethylene glycol monobutyl ether	112-34-5	1-30%
Triethylene glycol monomethyl ether	112-35-6	0-30%
Pentaethylene glycol	4792-15-8	0-25%
Tetraethylene glycol	112-60-7	0-20%
Triethylene glycol	112-27-6	0-20%
Polyethylene glycol monobutyl ether	9004-77-7	0-20%
Tetraethylene glycol propyl ether	6881-94-3	0-10%
Polypropylene glycol	25322-69-4	0-10%
Polyethylene glycol	25322-68-3	0-5%
Sodium phosphate	7601-54-9	0-5%
Diisopropanolamine	110-97-4	0-5%
Methyldiethanolamine	105-59-9	0-5%
Hexaethylene Glycol	2615-15-8	0-5%
Tetraethylene glycol monoethyl ether	5650-20-4	0-5%
Potassium dihydrogen phosphate	7778-77-0	0-5%
Phosphoric acid, monosodium Salt	7558-80-7	0-5%

The exact concentrations are a trade secret.

4. First Aid Measures

INHALATION: Remove to fresh air if effects occur and seek medical attention.

SKIN CONTACT: Remove contaminated clothing. Wash all affected and exposed areas with soap and water. If skin irritation or redness develops or persists, seek medical attention.

EYE CONTACT: Exposed eyes should be immediately flushed with copious amounts of water using a steady stream for a minimum of 20 minutes. Seek immediate medical attention.

INGESTION: If swallowed, get immediate medical advice by calling a Poison Control Center or hospital emergency room. If advice is not available, take victim and product container to the nearest emergency treatment center or hospital. Do not attempt to give anything by mouth to an unconscious person.

MOST IMPORTANT SYMPTOMS: Eye contact may cause irritation with possible corneal injury. May cause mild skin irritation or sensitization. Harmful if absorbed through the skin. Breathing high concentrations of vapors or mists may cause irritation, headache, dizziness, drowsiness, nausea, loss of sense of balance and visual disturbances. Swallowing may cause gastrointestinal disturbances including irritation, abdominal pain, back pain, nausea, vomiting, diarrhea, headache, dizziness, drowsiness, nausea, visual disturbances, decreased urine production, malaise, unconsciousness and liver or kidney damage. May cause chronic effects.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT, IF NEEDED: Seek immediate medical attention for eye contact, or large ingestions.

NOTES TO PHYSICIAN: It is estimated that the lethal oral dose of diethylene glycol in adults is 1.0-1.2 ml/kg. Diethylene glycol may cause an elevated anion-gap metabolic acidosis and renal tubular injury. Liver injury may occur, but not as severe as kidney injury. The signs and symptoms in diethylene glycol poisoning are those of metabolic acidosis, CNS depression and kidney injury. Urinalysis may show albuminuria, hematuria and oxaluria. The current medical management of diethylene glycol poisoning includes elimination of diethylene glycol, correction of metabolic acidosis and prevention of kidney injury. It is essential to have immediate and follow-up urinalysis and clinical chemistry. There should be particular emphasis on acid-base balance, and liver and kidney function tests. For severe and/or deteriorating cases, hemodialyis may be required. Dialysis should be considered for patients who have severe metabolic acidosis, or compromise of renal function. There is no conclusive evidence that ethanol treatment will be beneficial. 4-Methyl pyrazole (Fomepizole®) shows some promise as treatment because of its apparent lack of toxicity. Consult your poison control center.

5. Firefighting Measures

SUITABLE EXTINGUISHING MEDIA: Use water spray or fog, foam, carbon dioxide or dry chemical. Cool fire exposed containers with water.

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL: A solid stream of water or foam directed into hot, burning liquid can cause frothing. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Burning may produce carbon monoxide, carbon dioxide, and nitrogen oxides.

SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE FIGHERS: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored.

6: Accidental Release Measures

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES: Wear appropriate protective clothing and equipment (See Section 8).

METHODS AND MATERIALS FOR CONTAINMENT/CLEANUP: Collect with absorbent material and place in appropriate, labeled container for disposal.

7. Handling and Storage

PRECAUTIONS FOR SAFE HANDLING:

Avoid eye contact. Avoid prolonged skin contact. Avoid breathing vapors and mists. Use with adequate ventilation. Wash exposed skin thoroughly with soap and water after use.

Sudden release of hot organic chemical vapors or mists from process equipment operating at elevated temperature and pressure, or sudden ingress of air into vacuum equipment, may result in ignitions without any obvious ignition sources. Spills of this product on hot, fibrous insulation may result in spontaneous combustion.

Empty containers retain product residue and may be hazardous. Do not cut, weld, drill, etc. containers, even empty. Do not reuse empty containers unless properly cleaned.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES: Keep away from excessive heat and open flames. Do not add nitrites or other nitro sating agents. Nitrosamine, which may cause cancer, may be formed. Keep containers closed when not in use. Store in a cool, dry area.

NFPA CLASSIFICATION: Not Applicable

8. Exposure Controls / Personal Protection

EXPOSURE GUIDELINES

CHEMICAL	EXPOSURE LIMIT
Triethylene glycol monobutyl ether	None Established
Diethylene glycol	25 mg/m^3 TWA AIHA WEEL
Polyethylene glycol monomethyl ether	None Established
Triethylene glycol monoethyl ether	None Established
Diethylene glycol monobutyl ether	35 ppm TWA Manufacturer 10 ppm TWA ACGIH TLV (Inhalable fraction and vapor)
Triethylene glycol monomethyl ether	None Established
Pentaethylene glycol	10 mg/m^3 TWA Manufacturer
Tetraethylene glycol	None Established
Triethylene glycol	None Established
Polyethylene glycol monobutyl ether	None Established
Tetraethylene glycol propyl ether	None Established
Polypropylene glycol	10 mg/m^3 TWA AIHA WEEL
Polyethylene glycol	10 mg/m^3 TWA AIHA WEEL
Sodium phosphate	10 mg/m^3 TWA AIHA WEEL
Diisopropanolamine	10 ppm Manufacturer
Methyldiethanolamine	None Established
Hexaethylene Glycol	None Established
Tetraethylene glycol monoethyl ether	None Established
Potassium dihydrogen phosphate	None Established
Phosphoric acid, monosodium Salt	None Established

APPROPRIATE ENGINEERING CONTROLS: General ventilation should be adequate for normal use. For operations where the product is heated or misted and exposures may be excessive, mechanical ventilation such as local exhaust may be needed to minimize exposure.

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION: None under normal use conditions. For operations where exposures may be excessive, a NIOSH approved respirator with an organic vapor cartridge and a dust/mist prefilter or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration. Select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.

GLOVES: Chemical resistant gloves such as PVC coated gloves are recommended to prevent prolonged/repeated skin contact.

EYE PROTECTION: Splash proof goggles are recommended to prevent eye contact.

OTHER PROTECTIVE EQUIPMENT/CLOTHING: Protective clothing if needed to avoid prolonged/repeated skin contact. Suitable washing and eye flushing facilities should be available in the work area. Contaminated clothing should be removed and laundered or dry cleaned before re-use.

9. Physical and Chemical Properties

APPEARANCE:	Clear amber or yellow liquid	ODOR:	Mild odor
ODOR THRESHOLD:	Not determined	pH:	Not determined
MELTING/FREEZING POINT:	<-60°F (<-51°C)	BOILING POINT/RANGE:	>450°F (>232°C)
FLASH POINT:	> 250°F (>121°C) PMCC	EVAPORATION RATE:	Not determined
FLAMMABILITY (SOLID, GAS)	Not Applicable	FLAMMABILITY LIMITS:	LEL: Not determined UEL: Not determined
VAPOR PRESSURE:	< 0.01 mmHg @20°F	VAPOR DENSITY:	>1
RELATIVE DENSITY:	1.00 – 1.07	SOLUBILITIES	Water: 100%
PARTITION COEFFICIENT (n-octanol/water)	Not determined	AUTOIGNITION TEMPERATURE:	Not determined
DECOMPOSITION TEMPERATURE:	Not determined	VISCOSITY:	Not determined

10. Stability and Reactivity

REACTIVITY: Normally unreactive

CHEMICAL STABILITY: Stable

POSSIBILITY OF HAZARDOUS REACTIONS: Reaction with strong oxidizers will generate heat.

CONDITIONS TO AVOID: Contact with nitrites or other nitro sating agents may produce nitrosamine, a known animal carcinogen.

INCOMPATIBLE MATERIALS: Strong oxidizing agents, acids and strong alkalis.

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition will product carbon monoxide, carbon dioxide, nitrogen oxides, aldehydes, ketones, organic acids.

11. Toxicological Information

POTENTIAL HEALTH EFFECTS:

ACUTE HAZARDS:
INHALATION: None expected from short term exposures at ambient temperatures. At elevated temperatures, product may cause respiratory irritation, headache, dizziness, drowsiness, nausea, loss of sense of balance and visual disturbances. High concentrations of vapors at ambient temperatures may cause lung injury, liver dysfunction or kidney damage.

SKIN CONTACT: Prolonged or repeated exposure may cause mild irritation with redness and discomfort. Prolonged contact may cause defatting or drying of the skin.

EYE CONTACT: May cause irritation with tearing, blurred vision and possible corneal damage.

INGESTION: Ingestion may cause abdominal pain, back pain, nausea, vomiting, diarrhea, headache, dizziness, drowsiness, nausea, visual disturbances, decreased urine production, malaise, cardiopulmonary effects (metabolic acidosis), unconsciousness and liver or kidney damage.

CHRONIC EFFECTS: Prolonged or repeated skin contact with this product may possibly lead to irritation and dermatitis. Prolonged or repeated exposures may cause damage to the central nervous system, blood, lung, liver or kidneys. Adverse reproductive effects may also occur. Prolonged or widespread contact may result in the absorption of potentially harmful amounts resulting in effects similar to those listed under ingestion. Massive contact with damaged skin or with material sufficiently hot to burn the skin may result in absorption of potentially lethal amounts.

CARCINOGENICITY LISTING: None of the components is listed as a carcinogen or potential carcinogen by IARC, NTP, ACGIH, or OSHA.

ACUTE TOXICITY VALUES:

Calculated ATE for product:	LD50: Oral 833 mg/kg
Triethylene glycol monobutyl ether:	LD50: Oral Rat 5,300 mg/kg
	LD50: Skin Rabbit 3,540 mg/kg
Diethylene glycol:	LD50: Oral Rat 5,660 mg/kg
	LD50: Skin Rabbit: 2,700 mg/kg
Polyethylene glycol monomethyl ether:	LD50: Oral Rat 22 mL/kg
	LD50: Skin Rabbit: >20 mL/kg
Triethylene glycol monoethyl ether:	LD50: Oral Rat 10,610 mg/kg
	LD50: Skin Rabbit: 3,540 mg/kg
Diethylene glycol monobutyl ether:	LD50: Oral Rat 5,660 mg/kg
	LD50: Skin Rabbit: 2,700 mg/kg
Triethylene glycol monomethyl ether:	LD50: Oral Rat >10,500 mg/kg
	LD50: Skin Rabbit: 2,700 mg/kg
Pentaethylene glycol:	LD50: Oral Guinea pig: 22,500 mg/kg
Tetraethylene glycol:	LD50: Oral Rat >18,000 mg/kg
	LD50: Skin Rabbit: 20,000 mg/kg
Triethylene glycol:	LD50: Oral Rat >2,000 mg/kg
	LD50: Skin Rabbit: 16,000 mg/kg
Polyethylene glycol monobutyl ether:	LD50: Oral Rat >2,000 mg/kg
	LD50: Skin Rabbit: 3,540 mg/kg
Polypropylene glycol:	LD50: Oral Rat >2,000 mg/kg
	LD50: Skin Rabbit: >20,000 mg/kg
Polyethylene glycol:	LD50: Oral Rat >4,000 mg/kg
	LD50: Skin Rabbit: >20,000 mg/kg
Sodium phosphate:	LD50: Oral Rat: >2,000 mg/kg
Diisopropanolamine:	LD50: Oral Rat >4,000 mg/kg
	LD50: Skin Rabbit: >20,000 mg/kg
Methyldiethanolamine:	LD50: Oral Rat 1945 mg/kg
	LD50: Skin Rabbit: 2,700 mg/kg
Hexaethylene Glycol:	LD50: Oral Rat 32,000 mg/kg
Potassium dihydrogen phosphate:	LD50: Oral Rat 7,740 mg/kg
	LD50: Skin Rabbit: >20,000 mg/kg
Phosphoric acid, monosodium Salt:	LD50: Oral Rat >2,000 mg/kg
	LD50: Skin Rabbit: >2,000 mg/kg

12. Ecological Information

ECOTOXICITY:

Triethylene glycol monobutyl ether:	LC50: Pimephales promelas (Fathead minnow) 2400 mg/L/96 hr.
	LC50: Daphnia magna 2210 mg/L /48 hr.;

Diethylene glycol:	LC50 Western mosquitofish >32,000 mg/L/96 hr.
Triethylene glycol monoethyl ether:	LC50: Pimephales promelas (Fathead minnow) >10,000 mg/L/96 hr.
	LC50: Daphnia magna 10,000 mg/L /48 hr.
Diethylene glycol monobutyl ether:	LC50 Lepomis macrochirus (Bluegill sunfish) 1300 mg/L/96 hr.
Triethylene glycol monomethyl ether:	LC0 Brachydanio rerio >5000 mg/L/96 hr.
	LC50 Daphnia magna (Water flea, neonate) >10,000 mg /L/48 hr.
Tetraethylene glycol:	LC50 Pimephales promelas (fathead minnow) >10,000 mg/L/96 hr.
	LC50 Daphnia magna (Water flea, neonate) 7746 mg /L/48 hr.
Triethylene glycol:	LC50 Lepomis macrochirus >10,000 mg/L/96 hr.
	EC50 Daphnia magna (Water flea, neonate) >10,000 mg /L/48 hr.
Polypropylene glycol:	EC50 Daphnia magna (Water flea, neonate) >109 mg /L/48 hr.
Polyethylene glycol:	LC50 Poecilia reticulata>100 mg/L /96 hr.
Sodium phosphate:	LC50 Gambusia affinis (Western mosquitofish) 28.5 mg/L/96 hr.
Diisopropanolamine:	LC50 Brachydanio rerio (Zebra Fish) >1000 -2200 mg/L/ 96 hr.
Methyldiethanolamine:	LC50 Salmo gairdneri 762 mg/L/96 hr.
Potassium dihydrogen phosphate:	LC50 Rainbow Trout >100 mg/L/96 hr.
	EC50 Daphnia magna (Water flea, neonate) >100 mg /L/48 hr.
Phosphoric acid, monosodium Salt:	LC50 Rainbow Trout >100 mg/L/96 hr.
	EC50 Daphnia magna (Water flea, neonate) >100 mg /L/48 hr.

PERSISTENCE AND DEGRADABILITY:

Triethylene glycol monobutyl ether: The theoretical BODs for triethylene glycol monobutyl ether are 0, 5, and 24% for 5 days, 10 days, and 20 days, respectively
Diethylene glycol: Readily biodegradable (>70% in 19 days).
Triethylene glycol monoethyl ether: Readily biodegradable
Diethylene glycol monobutyl ether: Readily biodegradable (95% in 5 days).
Triethylene glycol monomethyl ether: Readily biodegradable
Tetraethylene glycol: Readily biodegradable
Triethylene glycol: Readily biodegradable
Polypropylene glycol: Readily biodegradable
Polyethylene glycol: Readily biodegradable
Diisopropanolamine: Achieved 39% of its theoretical oxygen demand using a sewage sludge following a 20 day incubation period.
Methyldiethanolamine: Was found to be non-biodegradable after 28 days.

BIOACCUMULATIVE POTENTIAL:

Triethylene glycol monobutyl ether: An estimated BCF of 3 was calculated in fish for triethylene glycol monobutyl ether. This BCF suggests the potential for bio concentration in aquatic organisms is low.
Diethylene glycol: An estimated BCF of 3 suggests the potential for bio concentration in aquatic organisms is low.
Triethylene glycol monoethyl ether: An estimated BCF of 3 suggests the potential for bio concentration in aquatic organisms is low.
Diethylene glycol monobutyl ether: An estimated BCF of 3 suggests the potential for bio concentration in aquatic organisms is low.
Triethylene glycol monomethyl ether: An estimated BCF of 3 suggests the potential for bio concentration in aquatic organisms is low.
Tetraethylene glycol: An estimated BCF of 3 suggests the potential for bio concentration in aquatic organisms is low.
Triethylene glycol: An estimated BCF of 3 suggests the potential for bio concentration in aquatic organisms is low.
Diisopropanolamine: An estimated BCF of 3 suggests the potential for bio concentration in aquatic organisms is low.
Methyldiethanolamine: An estimated BCF of 3.2 was calculated for N-methyldiethanolamine. This BCF suggests the potential for bio concentration in aquatic organisms is low.

MOBILITY IN SOIL:

Triethylene glycol monobutyl ether: Is expected to have very high mobility in soil.
Diethylene glycol: Diethylene glycol is highly mobile in soil.
Triethylene glycol monoethyl ether: Is expected to have very high mobility in soil.
Diethylene glycol monobutyl ether: Is expected to have very high mobility in soil.
Triethylene glycol monomethyl ether: Is expected to have very high mobility in soil.
Tetraethylene glycol: Is expected to have very high mobility in soil.
Triethylene glycol: Is expected to have very high mobility in soil.
Diisopropanolamine: Is expected to have very high mobility in soil.
Methyldiethanolamine: Is expected to have very high mobility in soil.

OTHER ADVERSE EFFECTS: None known

13. Disposal Considerations

Dispose of product in accordance with all local, state/provincial and federal regulations.

14. Transport Information

U.S. DOT HAZARD CLASSIFICATION: Not Regulated

DOT MARINE POLLUTANTS: This product does not contain Marine Pollutants as defined in 49 CFR 171.8.

IMDG CODE SHIPPING CLASSIFICATION: Not Regulated

CANADIAN TDG CLASSIFICATION: Not Regulated

15. Regulatory Information

EPA SARA 311/312 HAZARD CLASSIFICATION: Acute Health, Chronic Health

EPA SARA 313: This Product Contains the Following Chemicals Subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372):

Glycol Ethers	NA	<100%

PROTECTION OF STRATOSPHERIC OZONE: This product is not known to contain or to have been manufactured with ozone depleting substances as defined in 40 CFR Part 82, Appendix A to Subpart A.

CERCLA SECTION 103: This product is not subject to CERCLA reporting requirements, however, many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

CALIFORNIA PROPOSITION 65: This product does not contain chemicals regulated under California Proposition 65.

EPA TSCA INVENTORY: All of the components of this material are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory.

CANADIAN ENVIRONMENTAL PROTECTION ACT: All of the ingredients are listed on the Canadian Domestic Substances List.

CANADIAN WHMIS CLASSIFICATION: Class D - Division 2 - Subdivision B - (Toxic material causing other chronic effects)

CANADIAN WHIMIS HAZARD SYMBOLS: 

This SDS has been prepared according to the criteria of the Controlled Products Regulation (CPR) and the MSDS contains all of the information required by the CPR.

EUROPEAN INVENTORY OF EXISTING COMMERCIAL CHEMICAL SUBSTANCES (EINECS): All of the ingredients are listed on the EINECS inventory.

AUSTRALIA: All of the ingredients of this product are listed on the Australian Inventory of Chemical Substances.

CHINA: All of the ingredients of this product are listed on the Inventory of Existing Chemical Substance in China (IECSC).

16. Other Information

NFPA Rating: Fire: 1 Health: 2 Instability: 0

REVISION SUMMARY: All Sections – conversion to Hazcom 2012 classification and labeling and format.

SDS Date of Preparation/Revision: March 21, 2014

This SDS is directed to professional users and bulk handlers of the product. Consumer products are labeled in accordance with Federal Hazardous Substances Act regulations.

While Prestone Products Corporation believes that the data contained herein are factual and the opinions expressed are those of qualified experts regarding the results of tests conducted, the data are not to be taken as a warranty or representation for which Prestone Products Corporation assumes legal responsibility. They are offered for your consideration, investigation and verification. Any use of these data and information must be determined by the user to be in accordance with applicable federal, state and local laws and regulations.

If more information is needed, please contact:

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