



1. Chemical Product and Company Identification

Product name	CASTROL AUTOMOTIVE ANTIFREEZE
MSDS#	0000001737
Historic MSDS#:	None.
Product Use	Automotive coolant system (antifreeze/anticorrosion) concentrate For specific application advice see appropriate Technical Data Sheet or consult your Castrol representative
Supplier	Castrol Heavy Duty Lubricants Inc 9300 Pulaski Highway Baltimore, Maryland 21220-2495
EMERGENCY HEALTH INFORMATION:	1 (800) 424-9300 CHEMTREC (USA)
EMERGENCY SPILL INFORMATION:	1 (800) 447-8735
OTHER PRODUCT INFORMATION	1 (866) 4 BP - MSDS (866-427-6737 Toll Free - North America) email: bpcares@bp.com

2. Composition / information on ingredients

Ingredient Name	CAS #	% by Weight	Exposure Limits
Ethylene glycol	107-21-1	90-95	ACGIH TLV (United States, 2002). CEIL: 100 mg/m ³ CEIL: 100 mg/m ³ Form: Aerosol OSHA PEL 1989 (United States, 1989). CEIL: 125 mg/m ³ CEIL: 50 ppm
DIETHYLENE GLYCOL phosphoric acid, dipotassium salt	111-46-6 7758-11-4	0-5 1-2	None assigned. None assigned.

3. Hazards identification

Physical state	Liquid.
Color	Green.
Emergency Overview	WARNING! HARMFUL IF SWALLOWED. SLIGHTLY IRRITATING TO THE EYES. Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Wash thoroughly after handling.
Routes of Entry	Skin contact. Eye contact. Inhalation. Ingestion.
POTENTIAL HEALTH EFFECTS	
Eyes	Slightly irritating to the eyes.
Skin	Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis.
Inhalation	Exposure to vapor or mist may cause respiratory tract irritation.
Ingestion	Harmful if swallowed. Symptoms similar to alcohol intoxication. Contains material which may cause damage to the following organs: kidneys. See Toxicological Information (section 11)

See Toxicological Information (section 11)

4. First-aid measures

Eye Contact	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.
Skin Contact	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion	Get medical attention urgently informing the doctor that a product containing ethylene glycol has been ingested and specific treatment may be required (see Advice to physicians).
Notes to Physician	Gastric lavage is indicated if significant quantities have been ingested in the previous 4 hours. The metabolism of the glycol to oxalic acid may be delayed by the intravenous administration of ethanol (give as a 5% solution in physiological saline to maintain a blood level of 1-2mg/ml). This has been shown to be an effective antidote provided treatment is started within about 6 hours of exposure. The glycol may be removed by dialysis but oxalates are not readily removed.

5. Fire-fighting measures

Flammability of the Product	May be combustible at high temperature.
Autoignition temperature	398 °C
Flash point	119 °C (Closed cup) Setaflash.
Explosion Limits	LOWER: 3.2 % UPPER: 15.3 %
Products of Combustion	These products are carbon oxides (CO, CO ₂).
Unusual fire/explosion hazards	None identified.
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.
Protective Clothing (Fire)	Firefighters should wear full bunker gear, including a positive pressure self-contained breathing apparatus.
Special Remarks on Fire Hazards	Containers may rupture from pressure build-up.

6. Accidental release measures

Personal Precautions	Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (Section 8). Follow all fire fighting procedures (Section 5).
Environmental Precautions and Clean-up Methods	If emergency personnel are unavailable, contain spilled material. For small spills add absorbent (soil may be used in the absence of other suitable materials) scoop up material and place in a sealed, liquid-proof container for disposal. For large spills dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal. Minimize contact of spilled material with soils to prevent runoff to surface waterways. See Section 13 for Waste Disposal Information.
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

7. Handling and storage

Handling	Do not ingest. Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling.
Storage	Keep container tightly closed. Keep container in a cool, well-ventilated area.

8. Exposure controls/personal protection

Occupational Exposure Limits

Ethylene glycol	ACGIH TLV (United States, 2002). CEIL: 100 mg/m ³ CEIL: 100 mg/m ³ Form: Aerosol
DIETHYLENE GLYCOL	OSHA PEL 1989 (United States, 1989). CEIL: 125 mg/m ³ CEIL: 50 ppm None assigned.

Control Measures

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Hygiene measures

Wash hands, forearms, and face thoroughly after handling compounds and before eating, smoking, using lavatory, and at the end of day.

Personal Protection

Eyes	Chemical splash goggles.
Skin and Body	Do not get on skin or clothing. Wear clothing and footwear that cannot be penetrated by chemicals or oil.
Respiratory	Use with adequate ventilation. Avoid breathing vapor or mist. If ventilation is inadequate, use a NIOSH certified respirator with an organic vapor cartridge and P95 particulate filter.
Hands	Wear gloves that cannot be penetrated by chemicals or oil. (PVC, neoprene, Rubber gloves.)

Consult local authorities for acceptable exposure limits.

9. Physical and chemical properties

Physical state	Liquid.
pH	10.5 to 11 (Basic.) at 50%
Odor	Mild
Color	Green.
Boiling Point / range	171 to 175 °C
Melting Point / range	-18 °C
Specific Gravity	1.12
Vapor Pressure	<0.01 kPa (<0.1 mmHg) (at 20°C)
Vapor Density (Air = 1)	2.1
Volatility	97% v/v
Solubility	Easily soluble in cold water, hot water.

10. Stability and reactivity

Stability and Reactivity	The product is stable.
Conditions to avoid	High temperatures. Keep away from water.
Incompatibility with Various Substances	Extremely reactive or incompatible with oxidizing agents. Slightly reactive to reactive with acids, moisture. Hygroscopic; keep container tightly closed.
Hazardous Decomposition Products	carbon oxides (CO, CO2)
Hazardous Polymerization	Will not occur.

11. Toxicological information

Acute toxicity May be fatal if swallowed. Contains material which causes damage to the following organs: kidneys. Ingestion may cause nausea, weakness and central nervous system effects. May cause convulsions.

At normal ambient temperatures this product will be unlikely to present an inhalation hazard because of its low volatility.

Acute toxicity

Ingredient Name	Test	Result	Route	Species
Ethylene glycol	LD50	5890 mg/kg	Oral	Rat
	LD50	13400 mg/kg	Oral	Rat
	LD50	10600 mg/kg	Dermal	Rabbit
DIETHYLENE GLYCOL	LD50	12565 mg/kg	Oral	Rat
	LD50	4400 mg/kg	Oral	Rabbit
	LD50	11890 mg/kg	Dermal	Rabbit

Chronic toxicity

Carcinogenic Effects

No component of this product at levels greater than 0.1% is identified as a carcinogen by ACGIH or the International Agency for Research on Cancer (IARC). No component of this product present at levels greater than 0.1% is identified as a carcinogen by the U.S. National Toxicology Program (NTP) or the U.S. Occupational Safety and Health Act (OSHA).

Mutagenic Effects

No component of this product at levels greater than 0.1% is classified by established regulatory criteria as a mutagen.

Reproductive Effects

No component of this product at levels greater than 0.1% is classified by established regulatory criteria as a reproductive toxin.

Teratogenic effects

No component of this product at levels greater than 0.1% is classified by established regulatory criteria as teratogenic or embryotoxic.

12. Ecological information

Ecotoxicity	Ecological testing has not been conducted on this product by Castrol. Unlikely to be harmful to aquatic organisms.
Persistence/degradability	Readily biodegradable
Mobility	Spillages may penetrate the soil causing ground water contamination.
Soil/Water Partition Coefficient (K_{OC})	This product is not likely to partition to organic material in the environment because its Log (K _{ow}) is: -1.30
Bioaccumulative potential	This product shows a low bioaccumulation potential.
Other Ecological Information	Miscible in water.

13. Disposal considerations

Waste Information Waste must be disposed of in accordance with federal, state and local environmental control regulations.
Consult your local or regional authorities.

14. Transport information**International transport regulations**

Regulatory Information	UN number	Proper shipping name	Class	Packing Group	Label	Additional information
DOT Classification	UN3082	Environmentally hazardous substance, liquid, n.o.s.(ethylene glycol)	9	III	Not determined.	Reportable Quantity 5000 lbs. (2268 kg)
TDG Classification	Not regulated.	-	- Not a TDG controlled material.	-	Not determined.	-
IMDG Classification	Not regulated.	-	Not controlled under IMDG.	Not applicable	Not determined.	-
IATA Classification	Not regulated.	-	-	Not applicable	Not determined.	-

Nonbulk Shipping Information

Product Name CASTROL AUTOMOTIVE ANTIFREEZE	MSDS# 0000001737	Page: 4/5
Version 1	Date of issue 02/25/2004.	Format US-FULL
		Language (ENGLISH)

15. Regulatory information

U.S. Federal Regulations

US INVENTORY (TSCA): In compliance.

SARA Title III Section 302 Extremely Hazardous Substances (40 CFR Part 355): This product is not regulated under Section 302 of SARA and 40 CFR Part 355.

SARA Title III Sections 311/312 Hazardous Categorization (40 CFR Part 370): CASTROL AUTOMOTIVE ANTIFREEZE : Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard

SARA 313 toxic chemical notification and release reporting: Ethylene glycol 92.5%

CERCLA Sections 102a/103 Hazardous Substances (40 CFR Part 302.4): Ethylene glycol: 5000 lbs. (2268 kg);

State Regulations

Pennsylvania RTK: Ethylene glycol: (environmental hazard, generic environmental hazard);

DIETHYLENE GLYCOL: (generic environmental hazard)

Massachusetts RTK: Ethylene glycol

New Jersey: Ethylene glycol

California prop. 65: No products were found.

Inventories

AUSTRALIAN INVENTORY (AICS): In compliance.

CANADA INVENTORY (DSL): In compliance.

CHINA INVENTORY (IECS): In compliance.

EC INVENTORY (EINECS): In compliance.

JAPAN INVENTORY (ENCS): In compliance.

KOREA INVENTORY (ECL): In compliance.

PHILIPPINE INVENTORY (PICCS): In compliance.

16. Other information

Label Requirements

WARNING!

HARMFUL IF SWALLOWED.

SLIGHTLY IRRITATING TO THE EYES.

Hazardous Material Information System (U.S.A.)

Health	2
Fire Hazard	1
Physical Hazard	0
Personal Protection	X

National Fire Protection Association (U.S.A.)



HISTORY

Date of issue

02/25/2004.

Date of Previous Issue

No Previous Validation.

Prepared by

Product Stewardship

Notice to Reader

NOTICE : This Material Safety Data Sheet is based upon data considered to be accurate at the time of its preparation. Despite our efforts, it may not be up to date or applicable to the circumstances of any particular case. We are not responsible for any damage or injury resulting from abnormal use, from any failure to follow appropriate practices or from hazards inherent in the nature of the product.