

# Radiator Relief™ FLUSH

## Coolant System Performance Cleaner

Radiator Relief™ FLUSH is an additive specially formulated to clean cooling systems of automotive vehicles, industrial or manufacturing equipment. Used in radiators, the additive helps to dissolve oily residue build-up left behind in old anti-freeze and coolant mixtures due to external contaminants, thereby extending the life of the system. Available in a 16 oz. bottle (#040202).

### CAPABILITIES

**Cooling Power:** Helps dissolve oily residue and contaminants to extend cooling system life.  
**Applications:** Radiator Relief™ FLUSH is added to radiators for cleaning purposes.  
**Cleanup:** None needed. Product biodegrades rapidly. Oil molecules do not form a tight emulsion with the solution.

### CHARACTERISTICS

**pH:** pH of concentrate is <11.0  
**Flash Point:** Negligible  
**Boiling Point:** N/A  
**Odor:** Mild Ammonia Odor. Hazy yellow in color.  
**Water Solubility:** Complete.  
**Shelf Life:** Indefinite when stored in closed containers between 32° F and 120° F  
**Residue:** Agent layer dissipates rapidly. Product leaves virtually no residue.

### ENVIRONMENTAL and SAFETY CONSIDERATIONS

**Biodegradability:** 100% in 21 days under ideal conditions.  
**Hazardous Components:** No components are listed in the NIOSH Recommendations for Occupational Health Standards, 1988, or are defined as hazardous by SARA, CERLA, or RCRA. No OSHA PEL's are established for other ingredients.  
**Handling:** Product is neutral when diluted. It may remove oil from skin and may irritate eyes if sprayed directly into them.  
**Disposal:** Agent may be disposed according to Local, State, and Federal Regulations.

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# MATERIAL SAFETY DATA SHEET

## RADIATOR RELIEF™ FLUSH

### SECTION I – IDENTIFICATION

**Distributor:** Design Engineering, Inc.  
**Address:** 604 Moore Rd  
**Phone:** (440) 930-7940 **Fax:** (440) 930-7967  
**Date Prepared:** February 2006 **Formulation #:** RR-235  
**Trade Name:** Radiator Relief™ FLUSH  
**Product:** Cleaning Agent

### SECTION II – INGREDIENTS AND HAZARD CLASSIFICATION

Material Name	Percentage	TLV	Hazard	CAS Number
AMMONIUM CARBONATE	5-Jan	N/A	IRRITANT	506-87-6
SODIUM METASILICATE	10-Jan	N/A	CORROSIVE	6834-92-0
WATER	85-95	N/A	N/A	7732-18-5

### SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

**Boiling Point:** N/A **Vapor Pressure (mm Hg):** N/A  
**Solubility in water:** 100% **Specific Gravity:** 1.071 @ 68° F.  
**pH:** <11 **Appearance and odor:** Hazy yellow liquid, Ammonia Odor

### SECTION IV – FIRE AND EXPLOSION DATA

**Flash Point:** N/A **Flammable Limits:** Non-flammable  
**LEL:** N/A **UEL:** N/A  
**Extinguishing Media:** Under normal conditions, product will not support combustion. However, ammonia may be given off if liquid is boiled.  
**Special Fire Fighting Procedures:** None **Unusual Fire and Explosion Hazards:** None

### SECTION V – REACTIVITY DATA

**Stability:** Stable.  
**Incompatibility:** Nitrites, strong oxidizing agents.  
**Hazardous Decomposition Products:** Ammonium Gas.  
**Hazardous Polymerization:** Will not occur.  
**Additional Cond. to Avoid:** See above

### SECTION VI – HEALTH HAZARD DATA

#### Routes of Entry

**Inhalation:** Yes **Skin:** Yes **Ingestion:** Yes

#### Signs and Symptoms of Exposure

**Accute Effects:** N/A  
**Skin:** Skin irritation.  
**Eyes:** May cause tearing.  
**Inhalation:** Nasal irritation.  
**Ingestion:** May cause gastrointestinal irritation, nausea, and/or diarrhea.  
**Chronic Effects:** N/A  
**Other Hazards:** N/A

#### First Aid

**Eyes:** Immediately flush eyes with water. **Skin:** Rinse with water.  
**Inhalation:** Negligible. Remove to fresh air. **Ingestion:** Drink water, contact physician immediately. Do not induce vomiting.

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### SECTION VII – PRECAUTIONS FOR SAFE HANDLING AND USE

**Spill or Leak Procedures**

Rinse affected area with water, for large spills pump in to salvage tank.

**Waste Disposal Method**

In accordance with Local, State and Federal Regulations

**Storage and Handling Precautions**

Store in temperatures from 32°F to 120°F in closed containers to prevent evaporation and deterioration. Freezing will not damage material as long as container remains intact.

**Other Precautions**

Although components have low hazard levels, the product will remove oils from the skin like common soap.

Avoid prolonged skin contact.

### SECTION VIII – SPECIAL PROTECTION INFORMATION

**Respiratory Protection:** Respirator if required.

**Ventilation:** Local exhaust

**Protective Gloves:** Rubber recommended.

**Eye Protection:** Safety goggles.

### SECTION VIX– SPECIAL PRECAUTION INFORMATION

**Storage & Handling:** None

**Other Precautions:** None

### SECTION X – HAZARD CLASSIFICATION

**IMO Hazard Class and Number:** Non-hazardous.

**UN Number:** Not applicable.

**US DOT Hazard Class:** Not regulated by DOT

**US DOT Identification Number:** Not applicable.

### SECTION XI – REGULATORY INFORMATION

**HMIS Rating:** Health: 2 Flammability: 0 Reactivity: 0 Personal Protective Equipment: B

The information presented in this MSDS is believed to be factual. However, nothing contained in this information is to be taken as a warranty of any kind. The user should review any recommendations, in the specific content use, to determine whether they are appropriate.

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