

MATERIAL SAFETY DATA SHEET

Trade Name: Johnsens Radiator Flush 12/7 oz
MSDS NO. 4917-8
Revision Date: 09/06/2007
Date Printed 01/31/2008

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Name: Johnsens Radiator Flush 12/7 oz
Chemical Family: ALKALI
Synonyms: None
Emergency Telephone (24 hr.): CHEMTREC 1-800-424-9300

Supplier: Technical Chemical Company, P.O. Box 139, Cleburne, Texas 76033

2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Weight %	OSHA TWA	OSHA STEL	OSHA SKIN
Sodium 2-mercaptobenzothiazole 2492-26-4	6-8	Not Listed	Not Listed	Not Listed
Sodium tetraborate 1330-43-4	3-4	Not Listed	Not Listed	Not Listed
Sodium orthophosphate 7601-54-9	1-2	Not Listed	Not Listed	Not Listed
Sodium hydroxide 1310-73-2	1-2	Not Listed	Not Listed	Not Listed
Sodium nitrate 7631-99-4	.5-1	Not Listed	Not Listed	Not Listed
Sodium metasilicate 6834-92-0	.1-1	Not Listed	Not Listed	Not Listed
Polyoxyethylene-polyoxypropylene glycol 9003-11-6	.1-.5	Not Listed	Not Listed	Not Listed

Component	Weight %	OSHA Z PEL	OSHA Z TWA	OSHA Z Ceiling
Sodium 2-mercaptobenzothiazole 2492-26-4	6-8	Not Listed	Not Listed	Not Listed
Sodium tetraborate 1330-43-4	3-4	Not Listed	10 mg/m ³	Not Listed
Sodium orthophosphate 7601-54-9	1-2	Not Listed	Not Listed	Not Listed
Sodium hydroxide 1310-73-2	1-2	2 mg/m ³	Not Listed	Not Listed
Sodium nitrate 7631-99-4	.5-1	Not Listed	Not Listed	Not Listed
Sodium metasilicate 6834-92-0	.1-1	Not Listed	Not Listed	Not Listed
Polyoxyethylene-polyoxypropylene glycol 9003-11-6	.1-.5	Not Listed	Not Listed	Not Listed

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Component	ACGIH TLV TWA	ACGIH TLV STEL	ACGIH TLV Ceiling
Sodium 2-mercaptobenzothiazole 2492-26-4	Not Listed	Not Listed	Not Listed
Sodium tetraborate 1330-43-4	2 mg/m ³ Inhalable fraction.	6 mg/m ³ Inhalable fraction.	Not Listed
Sodium orthophosphate 7601-54-9	Not Listed	Not Listed	Not Listed
Sodium hydroxide 1310-73-2	Not Listed	Not Listed	2 mg/m ³
Sodium nitrate 7631-99-4	Not Listed	Not Listed	Not Listed
Sodium metasilicate 6834-92-0	Not Listed	Not Listed	Not Listed
Polyoxyethylene-polyoxypropylene glycol 9003-11-6	Not Listed	Not Listed	Not Listed

3. HAZARDS IDENTIFICATION

Emergency Overview: Avoid breathing vapors. Causes respiratory irritation. DANGER: CORROSIVE Avoid contact with skin and eyes. Causes severe eye irritation. Will damage tissue.

HMIS Classification: Health: 3 Flammability: 1 Physical Hazard: 1
NFPA Rating: Health: 1 Flammability: 1 Reactivity: 0

4. FIRST AID MEASURES

Eye Contact: In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

Ingestion: If swallowed, do NOT induce vomiting. Call a physician immediately. Never give anything by mouth to an unconscious person.

Inhalation: If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get immediate medical attention.

5. FIRE FIGHTING MEASURES

Flammable Properties

Flash Point F(°C): Not Determined
Flash Point Method: Not Applicable
Flammable Limits in Air - Lower (%): Not Determined
Flammable Limits in Air - Upper (%): Not Determined
Autoignition Temperature F(°C): Not Determined
Extinguishing Media: Foam. Water. Dry chemical.

Protection Of Fire-Fighters:
Special Fire-Fighting Procedures: Wear approved positive-pressure self-contained breathing apparatus and protective clothing. Do not direct a solid stream of water or foam into hot, burning pools; this may cause frothing and increase fire intensity.

Hazardous Combustion Products: Fumes and Smoke. Carbon Monoxide. Oxides of carbon, nitrogen and phosphorus. Sulfur oxides.
Aerosol Comments: Not Applicable

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear appropriate protective clothing and equipment to prevent skin and eye contact.
Spill Procedures: Contain any liquid from leaking containers.
Action to be taken if material is released or spilled: Wear proper protective equipment as specified in the protective equipment section. Increase area ventilation. Absorb spills on inert material such as perlite, vermiculite, sand or dirt. Place in double polyethylene bags. Isolate from other waste materials.
Environmental Precautions: Do not allow to enter sanitary drains, sewer or surface and subsurface waters.

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7. HANDLING AND STORAGE

Handling and Storage: Keep container closed when not in use. Avoid breathing vapors, if exposed to high vapor concentration, leave area at once. Avoid contact with skin and eyes. Use only in a well ventilated area. Keep away from food and smoking materials. Wash hands before eating and smoking.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Showers. Eyewash stations. Use in a well ventilated area.
Eyes: Wear safety glasses or goggles to protect against exposure.
Skin Protection: Use chemical resistant gloves for prolonged skin contact. Wash hands and other exposed areas with mild soap and water before eating, drinking, smoking and when leaving work.
Respiratory Protection: Use in a well ventilated area. Use approved NIOSH respiratory protection if TLV exceeded..... Or over exposure is likely.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Liquid
Odor: UNKNOWN
pH Value: 10.8-11.2
Vapor Pressure: Not Determined
Vapor Density (Air=1): Not Determined
Boiling Point (°F): 212F
Melting/Freezing Point: Not determined.
Solubility in Water: SOLUBLE
Bulk Density at 20°C: Not Determined
Molecular Weight: Mixture
Specific Gravity (H2O=1): not determined
Viscosity: Not determined.
Evaporation Rate: Not Determined
VOC Content(%): Not determined.
Decomposition Temperature: Not Known

10. STABILITY AND REACTIVITY

Chemical Stability: STABLE.
Conditions to Avoid: Excessive heat. Incompatible materials.
Materials to Avoid: Strong oxidizing agents. Strong acids. Flammables. Nitro and chloro organic compounds,metals (aluminum), and nitrous compounds
Hazardous Decomposition Products: Carbon monoxide. Carbon dioxide. Oxides of nitrogen. Oxides of sulfur. Oxides of sodium. Oxides of phosphorus.
Hazardous Polymerization: WILL NOT OCCUR

11. TOXICOLOGICAL INFORMATION

Toxicological Data:

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Component	Route	Species	Dose
Sodium 2-mercaptobenzothiazole 2492-26-4	Oral	Rats	LD50 5200 mg/kg
Sodium tetraborate 1330-43-4	Oral	Rats	LD50 3200 mg/kg
Sodium orthophosphate 7601-54-9	Inhalation	Rats	Not known.
Sodium hydroxide 1310-73-2	Oral	Rats	LD50 100 mg/kg
Sodium nitrate 7631-99-4	Oral	Rats	LD50 4.3 grams/kg
Sodium metasilicate 6834-92-0	Oral	Rats	LD50 770 mg/kg
Polyoxyethylene-polyoxypropylene glycol 9003-11-6	Oral	Rats	LD50 1.72 grams/kg

Carcinogenicity:

Component	IARC	NTP	OSHA
Sodium 2-mercaptobenzothiazole 2492-26-4	Not Listed	Not Listed	Not Listed
Sodium tetraborate 1330-43-4	Not Listed	Not Listed	Not Listed
Sodium orthophosphate 7601-54-9	Not Listed	Not Listed	Not Listed
Sodium hydroxide 1310-73-2	Not Listed	Not Listed	Not Listed
Sodium nitrate 7631-99-4	Not Listed	Not Listed	Not Listed
Sodium metasilicate 6834-92-0	Not Listed	Not Listed	Not Listed
Polyoxyethylene-polyoxypropylene glycol 9003-11-6	Not Listed	Not Listed	Not Listed

12. ECOLOGICAL INFORMATION

Remarks: Ecological testing has not been conducted on this product.

13. DISPOSAL CONSIDERATION

Waste Classification: Not determined.
Waste Management: Not determined.
Disposal Method: Disposal should be made in accordance with federal, state and local regulations.

14. TRANSPORTATION INFORMATION

U.S. DOT:
Proper Shipping Name: ORM-D Consumer Commodity
Hazard Class: ORM-D
UN/NA Number: Not Applicable
DOT Packing Group: Not Applicable

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14. TRANSPORTATION INFORMATION

IMDG:
Proper Shipping Name: Corrosive Liquid, basic, organic, n.o.s.
Hazard Class: 8
Hazard Subclass: Not determined.
UN No.: UN3265
Packing Group: II
Marine Pollutant: No

15. REGULATORY INFORMATION

US Federal Regulations:

Component	SARA 313	SARA 302	TPQ	RQ
Sodium 2-mercaptobenzothiazole 2492-26-4	Not Listed	Not Listed	Not Listed	Not Listed
Sodium tetraborate 1330-43-4	Not Listed	Not Listed	Not Listed	Not Listed
Sodium orthophosphate 7601-54-9	Not Listed	Not Listed	Not Listed	Not Listed
Sodium hydroxide 1310-73-2	Not Listed	Not Listed	Not Listed	Not Listed
Sodium nitrate 7631-99-4	Listed.	Not Listed	Not Listed	Not Listed
Sodium metasilicate 6834-92-0	Not Listed	Not Listed	Not Listed	Not Listed
Polyoxyethylene-polyoxypropylene glycol 9003-11-6	Not Listed	Not Listed	Not Listed	Not Listed

SARA 311/312 Hazard Categories: Not Determined.

State Regulations:

Component	California Prop. 65 Cancer list	California - Prop 65 Developmental Toxicity	California Prop. 65 Reproductive Female	California Prop. 65 Reproductive Male
Sodium 2-mercaptobenzothiazole 2492-26-4	Not Listed	Not Listed	Not Listed	Not Listed
Sodium tetraborate 1330-43-4	Not Listed	Not Listed	Not Listed	Not Listed
Sodium orthophosphate 7601-54-9	Not Listed	Not Listed	Not Listed	Not Listed
Sodium hydroxide 1310-73-2	Not Listed	Not Listed	Not Listed	Not Listed
Sodium nitrate 7631-99-4	Not Listed	Not Listed	Not Listed	Not Listed
Sodium metasilicate 6834-92-0	Not Listed	Not Listed	Not Listed	Not Listed
Polyoxyethylene-polyoxypropylene glycol 9003-11-6	Not Listed	Not Listed	Not Listed	Not Listed

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Component	New Jersey Right-to-Know List:
Sodium orthophosphate 7601-54-9	Substance no. 1724
Sodium hydroxide 1310-73-2	Substance no. 1706
Sodium nitrate 7631-99-4	Substance no. 1711

U.S. TSCA: The components of this product are listed on the TSCA Inventory.
Canadian Inventory: One or more components of this product is not listed on the Canadian DSL or NDSL Inventory.

16. OTHER INFORMATION

General Notes:
Disclaimer:

Do not allow undiluted material or large quantities to reach groundwater, bodies of water or sewer system. The information and recommendations contained herein are based upon tests believed to be reliable. However, the manufacturer/distributor of this product does not guarantee their accuracy or completeness NOR SHALL ANY OF THIS INFORMATION CONSTITUTE A WARRANTY, WHETHER EXPRESSED OR IMPLIED, AS TO THE SAFETY OF THE GOODS, THE MERCHANTABILITY OF THE GOODS, OR THE FITNESS OF THE GOODS FOR A PARTICULAR PURPOSE. Adjustment to conform to actual conditions of usage may be required. The manufacturer/distributor assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied.