

MATERIAL SAFETY DATA SHEET**2357****SECTION 1 CHEMICAL PRODUCT AND COMPANY INFORMATION**

MSDS REC'D by Trane April 30, 2001

Product Name: ServiceFirst Descaler — Hydrochloric Acid Base

Date Prepared Apr. 30, 2001

Product Number(s): CHM00025, CHM00183

Replaces Feb. 28, 2001

Product Use: Scale remover

Company Name: North American Research Corporation
P.O. Box 1318
Lewisville, TX 75067

Telephone Numbers: (972) 492-1800, (800) 527-7520, Fax (972) 394-6755

Emergencies: Infotrac (800) 535-5053 (24 hours, everyday)

SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

OSHA Hazardous Components (29 CFR 1910.1200):

	CAS Registry No.	OSHA PEL	ACGIH TLV	Other Limits	% (Optional)
Hydrogen Chloride	7647-01-0	5 ppm Ceiling	5 ppm Ceiling	50 ppm IDLH	< 80

SECTION 3 HAZARDS IDENTIFICATION**EMERGENCY OVERVIEW**

Red liquid with a pungent, irritating odor.

DANGER! Causes severe burns to skin, eyes and digestive tract. Harmful if swallowed or inhaled.

POTENTIAL HEALTH EFFECTS**EYE CONTACT:**

Corrosive. Liquid or concentrated vapors can cause eye irritation, severe burns and permanent damage including blindness.

SKIN CONTACT:

Corrosive. Liquid hydrochloric acid or concentrated vapors can rapidly cause burning of skin. Repeated or prolonged contact with dilute solutions, and concentrated vapors, can cause irritation and dermatitis.

INHALATION:

Inhalation is a major route of exposure. Hydrogen chloride gas, mist and vapor can cause irritation of respiratory tract, with burning, choking, coughing, headaches and rapid heartbeat. Levels of 10 to 35 ppm can cause irritation of throat and 50-100 ppm is nearly unbearable for 1 hour. Inflammation, destruction of nasal passages and breathing difficulties can occur with higher concentrations and may be delayed in onset. 1000-2000 ppm can be fatal.

INGESTION:

Can cause severe burns of mouth, esophagus and stomach. Nausea, pain and vomiting frequently occur. Depending upon amount swallowed, holes in the intestinal tract, kidney inflammation, shock and death can occur.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Asthma, bronchitis, emphysema and other lung conditions and chronic nose, sinus or throat conditions. Exposure may aggravate existing skin and/or eye conditions on contact.

CARCINOGENICITY: NTP? No IARC Monographs? No OSHA Regulated? No

SECTION 4 FIRST-AID MEASURES**EYE CONTACT:**

Wash eyes immediately with large amounts of water (preferably eye wash fountain), lifting the upper and lower eyelids and rotating eyeball. Continue washing for a minimum of 15 minutes. Get medical attention immediately.

SKIN CONTACT:

Remove contaminated clothing and wash skin thoroughly for a minimum of 15 minutes with large quantities of water (preferably a safety shower). Get medical attention immediately.

INHALATION:

Move person to fresh air. If breathing stops, administer artificial respiration. Get medical attention immediately.

INGESTION:

If swallowed, DO NOT induce vomiting. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

SECTION 5 FIRE-FIGHTING MEASURES

FLASHPOINT: Not flammable METHOD: Not applicable

FLAMMABLE LIMITS: LEL: Not applicable UEL: Not applicable

AUTOIGNITION TEMP: Not applicable

2357**FIRE EXTINGUISHING MEDIA:**

Use any means suitable for extinguishing surrounding fire. Water spray may be used to keep fire-exposed containers cool.

SPECIAL INFORMATION:

In the event of a fire, wear full protective clothing and NIOSH approved, self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Evacuate immediate area where concentrated fumes are present. Cleanup personnel must wear proper protective equipment (see Section 8). Completely contain spilled acid with dikes, etc., and prevent run-off into ground and surface waters or into sewers. Neutralize with soda ash or dilute caustic soda. If spill occurs indoors, turn off heating and/or air conditioning systems, to prevent vapors from contaminating entire building. Neutralization products, both liquid and solid, must be recovered for proper disposal. Reportable Quantity (RQ) is 5000 lbs. Notify National Response Center (800/424-8802) of uncontained releases to the environment in excess of the RQ.

SECTION 7 STORAGE AND HANDLING

HANDLING:

Avoid contact with skin and avoid breathing vapors. Do not eat, drink, or smoke in work area. Wash hands prior to eating, drinking, or using restroom. Any protective clothing, or shoes which become contaminated with hydrochloric acid should be removed immediately, and laundered before wearing again. Follow protective controls set forth in Section 8 when handling this product.

STORAGE:

Store in closed, properly labeled, original containers. Do not store near strong alkalis or reactive materials. Do not remove or deface label or tag. Hydrogen chloride can react with cyanide, forming lethal concentrations of hydrocyanic acid.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS:

Use in a well ventilated area. Use NIOSH / MSHA approved respirator if concentrations are above exposure limits. Use mechanical ventilation as necessary to maintain air concentration below 5 ppm, at all times.

PERSONAL PROTECTION:

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eyewash fountain and quick-drench facilities in the work area. Wear impervious protective clothing, including boots, gloves, apron, or coveralls, as appropriate to prevent skin contact.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: Dark red liquid. Pungent odor.

SPECIFIC GRAVITY: 1.16

VAPOR PRESSURE: 78 mm Hg @ 20°C

VAPOR DENSITY: 1.27

SOLUBILITY IN WATER: Complete

pH: 1

BOILING POINT: 150°F-230°F

FREEZING / MELTING POINT: Not applicable

EVAPORATION RATE (Butyl Acetate = 1): < 1

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Stable under ordinary conditions of use and storage.

CONDITIONS TO AVOID: Contact with strong bases can cause violent reaction generating large amounts of heat. Reactions with metals can release flammable hydrogen gas.

INCOMPATIBILITY (Materials to Avoid): Bases, metals, mercuric sulfate, perchloric acid, carbides of calcium, cesium, rubidium, acetylides of cesium and rubidium, phosphides of calcium and uranium and lithium silicide.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS: None known.

SECTION 11 TOXICOLOGICAL INFORMATION

Hydrogen Chloride (7647-01-0): Inhalation rat LC50: 3124 ppm/1H; oral rabbit LD50: 900 mg/kg (Hydrochloric acid concentrated); investigated as a tumorigen, mutagen, reproductive effector.

SECTION 12 ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE:

Water: Hydrogen Chloride in water dissociates almost completely, and will be neutralized by natural alkalinity and carbon dioxide.

Soil: Hydrochloric acid will sink into the soil. This acid will dissolve some soil material (in particular, anything with a carbonate base), and will be somewhat neutralized. The remaining portion is thought to transport downward to the water table

2357**ECOTOXICITY:**

Acute LC50 (48 Hours, static) for Bluegill: 3.6 mg/l

Acute LC50 (96 Hours, static) for Mosquito Fish: 282 ppm

SECTION 13 DISPOSAL CONSIDERATIONS

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to an RCRA approved incinerator or disposed in an RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

SECTION 14 TRANSPORT INFORMATION

U.S. Department of Transportation:

Hydrochloric Acid Solution, 8, UN1789, PGII

SECTION 15 REGULATORY INFORMATION

TSCA: All components of this product are listed on the TSCA inventory.

CERCLA: Hydrogen Chloride (7647-01-0); 5000 lbs.

SARA TITLE III:

Section 311/312 Hazard Category: Acute: Yes Chronic: No Fire: No Pressure: No Reactive Hazard: No

Section 313 Reportable Ingredients: Hydrogen Chloride (7647-01-0) is subject to the reporting requirements of Section 313 of Title III of the 1986 Superfund Amendments and Reauthorization Act (SARA) and 40 CFR Part 372. RQ 5000 lbs.

SECTION 16 OTHER INFORMATION

NFPA RATING: Health – 3, Flammability – 0, Reactivity – 0

HMIS[®] RATING: Health – 3, Flammability – 0, Reactivity – 0

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