



MATERIAL SAFETY DATA SHEET

PRODUCT IDENTIFICATION

PRODUCT NAME: SCALE REMOVER
PART # NSR1G, NSR5G

(NFPA RATINGS)

HEALTH: 3
FIRE: 0
REACTIVITY: 0

HMIS PROTECTIVE EQUIPMENT: X See your supervisor

PRODUCT INFORMATION (800) 262-0012	MEDICAL EMERGENCY (856) 455-4555
TRANSPORTATION EMERGENCY CHEMTREC (800) 424-9300	DISTRIBUTOR / MANUFACTURER NATIONAL REFRIGERANTS, INC. 661 KENYON AVE. ROSENHAYN, NJ

HAZARDOUS INGREDIENTS

OSHA Hazardous Components (29 CFR 1910.1200)

Hydrochloric acid (CAS# 7647-01-0)
Isopropyl alcohol (CAS# 67-63-0)

EXPOSURE LIMITS: 8 HR. TWA

OSHA PEL	ACGIH TLV
CL 5ppm	CL 5ppm
400 ppm	400 ppm
STEL: 500 ppm	STEL: 500 ppm

HAZARDS IDENTIFICATIONS

EMERGENCY OVERVIEW: DANGER! Corrosive. Harmful if swallowed or inhaled. Tissue damage to skin and eyes on contact.

POTENTIAL HEALTH EFFECTS:

INHALATION: Symptoms may include coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting.

EYE CONTACT: Contact leads to immediate irritation and burning with destruction of eye tissue.

SKIN CONTACT: Contact leads to immediate irritation and burning sensation followed by destruction of skin tissue. Absorption is unlikely. May aggravate pre-existing skin disorders.

INGESTION: Material is corrosive and toxic.

CHRONIC Effects: None established.

NOTE:

CARCINOGENICITY: LISTED IN NTP? No

IARC? No

OSHA Regulated? No

FIRST AID MEASURES

INHALATION: Remove victim to fresh air and, if needed, immediately begin artificial respiration. Give oxygen if breathing is labored. Get emergency medical help. Contact a physician immediately.

EYE CONTACT: Flush eyes with water for 15 minutes. Get medical attention if symptoms develop and persist.

SKIN CONTACT: Flush with water or soap and water for 15 minutes or until all traces have been removed. Seek medical attention if symptoms develop and persist.

INGESTION: Do not induce vomiting. Rinse mouth out with water. Get immediate medical attention.



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FIRE FIGHTING MEASURES

FLASHPOINT (TEST METHOD): None - aqueous solution.
FLAMMABLE LIMITS: **LOWER:** NA **UPPER:** NA
AUTOIGNITION TEMPERATURE: NE
GENERAL HAZARD: Acrid smoke and toxic fumes.
FIRE FIGHTING INSTRUCTIONS: Approach fire from upwind side. Avoid breathing smoke, fumes, mist or vapors on the downwind side. Firefighters wear protective clothing and self contained breathing apparatus.
EXTINGUISHING MEDIA: Dry powder, carbon dioxide (CO₂), water fog or spray.
HAZARDOUS COMBUSTION PRODUCTS: Acrid smoke, toxic fumes of Cl, CO, and CO₂.

ACCIDENTAL RELEASE MEASURES

LAND SPILL: Emergency response coordinator must have mandated training. Eliminate all ignition sources. **SMALL SPILLS:** Pick up with absorbent materials and place in non-leaking containers; seal tightly for proper disposal or reuse. **LARGE SPILLS:** Evacuate the hazard area of unprotected personnel. Wear appropriate respirator and protective clothing. Shut off source of leak if safe to do so. Dike and contain. Remove with vacuum trucks or pump to storage/salvage vessels.
WATER SPILL: Notify proper authorities. Clean up leaks/spills immediately to prevent soil or water contamination.

HANDLING AND STORAGE

HANDLING: Always add acid to water, never water to acid. Avoid contact with skin, eyes, and clothing. After handling this product, wash hands before eating, drinking, or smoking. If contact occurs, remove contaminated clothing. If needed, take first aid action shown in section IV. Launder contaminated clothing before reuse.
STORAGE: Store in a cool place away from ignition sources. Store away from oxidizers.

EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Local exhaust ventilation is recommended.
PERSONAL PROTECTION: Rubber polyethylene or similarly chemical impervious gloves, chemical goggles or full face shield. Boots, aprons, drench showers, eye wash as needed for protection against spills and/or splashes.

PHYSICAL AND CHEMICAL PROPERTIES

VAPOR PRESSURE: NA
SPECIFIC GRAVITY (H₂O=1): 1.1
SOLUBILITY IN WATER: Complete
pH: <2
BOILING POINT: 230 F
APPEARANCE & ODOR: Black liquid, sharp, pungent odor.
VAPOR DENSITY (Air=1): ND
EVAPORATION RATE (BuAc=1): ND
VOC (G/L): 42
FREEZING POINT: ND

STABILITY AND REACTIVITY

STABILITY: Stable.
CONDITIONS TO AVOID: High temperatures.
MATERIALS TO AVOID: Alkaline materials, metals.
HAZARDOUS DECOMPOSITION PRODUCTS: From combustion: Acrid smoke, CO, CO₂, toxic fumes of Cl.
HAZARDOUS POLYMERIZATION: Will not occur.



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TOXICOLOGICAL INFORMATION

Hydrochloric acid	LDLo: 81 mg/kg	(unr - man)
	LD50: 900 mg/kg	(oral - rabbit)
	LCLo: 1300 ppm/30 min.	(inh - human)
	LCLo: 3000 ppm/5 min.	(inh - human)
Isopropyl alcohol	TDLo: 223 mg/kg	(oral - human) CNS,CVS
	LDLo: 3570 mg/kg	(oral - human) CNS, PUL, GIT
	LD50: 12800 mg/kg	(skin - rabbit)
	LD50: 3600 mg/kg	(oral - mouse)

ECOLOGICAL INFORMATION

Dangerous to aquatic life in high concentrations.

Hydrochloric acid	282 ppm / 96 hr / mosquito fish / TLm / fresh water
	100-330 ppm / 48 hr / shrimp / LC50 / salt water
Isopropyl alcohol	900-1100 ppm / 24 hr / chub / critical range / fresh water

DISPOSAL CONSIDERATIONS

Dispose as hazardous waste. Classification and documentation is required before disposal. Follow all local, state and federal regulations.

TRANSPORTATION INFORMATION

PROPER SHIPPING NAME: Corrosive liquids, n.o.s. (hydrochloric acid)
HAZARD CLASS: 8
IDENTIFICATION NUMBER: UN1760
DOT Emergency Guide #: 157
Reportable Quantity (RQ): Not applicable
International: UN 1760, Corrosive liquids, n.o.s. (hydrochloric acid), 8, PGI

REGULATORY INFORMATION

TSCA (Toxic Substance Control Act): Components of this product are listed on the TSCA Inventory.
CERCLA (Comprehensive Environmental Response, Compensation and Liability Act): Reportable quantity is 5000 lbs. (hydrochloric acid). Contact local authorities for other reporting requirements.
SARA TITLE III (Superfund Amendments and Reauthorization Act): Not Listed
CALIFORNIA PROPOSITION 65: Not listed.

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DATE OF LATEST REVISION/REVIEW: 10/09
PERSON RESPONSIBLE FOR MSDS: Ray Madariaga