MATERIAL SAFETY DATA SHEET: BANISH

Section I - General Information

(000000-000000- - 0028)

Date of Issue:
1/29/2008 12:00:00 AM

Supercedes:
4/17/2007 12:00:00 AM

Chemical Name & Synonyms:
N/A

Trade Name & Synonyms:
BANISH

Chemical Family:
HYDROCHLORIC ACID SOLUTION

Formula is a mixture: [√]

Manufacturer Name:
CHEMSEARCH DIV. OF NCH CORP.

Manufacturer Address:
BOX 152170
IRVING, TX 75015

Prepared By:
K SINGH/CHEMIST

Product Code Number:
0028

Emergency Phone Number:
800-424-9300

Section II - Hazardous Ingredients

THE HAZARDS PRESENTED BELOW ARE THOSE OF THE INDIVIDUAL COMPONENTS

Chemical Name (Ingredients)	Hazard	TLV	PEL	STEL	CAS #
HYDROCHLORIC ACID C Ceiling limit * As Hydrogen Chloride	CORROSIVE	N/E 1	5 ppm C* 2	2 ppm C* 1	7647-01-0

Section III - Physical Data

Boiling Point (°F): 220
Vapor Pressure (mm Hg): 15.4
Vapor Density (Air=1): 0.7
pH @ 100% : <1
% Volatile by Volume: 99
H_2O Solubility: Complete

Specific Gravity (H_2O=1): 1.09
Color: Light amber
Odor: Pungent acid
Clarity: Transparent
Evaporation Rate (BuAc=1): 0.6
Viscosity: Non-Viscous

Section IV - Fire and Explosion Hazard

Flash Point: Non-flam
Flammable Limits: Hydrogen gas
LEL: 75%

Method Used: N/A
UEL: 4%
Aerosol Level (NFPA 30B): N/A

Extinguishing Media:

[√] Foam [√] Alcohol Foam [√] CO2
[√] Dry Chemical [√] Water Spray [√] Other

NFPA 704 Hazard Rating:

4-Extreme
3-High
2-Moderate
1-Slight
0-Insignificant

Health: 3
Flammability: 0
Instability: 1
Special:

Special Fire Fighting Procedures:
Firefighters should wear a self-contained breathing apparatus and full protective gear. Extinguishing media should be chosen based on the nature of the surrounding fire. Cool fire-exposed containers with water spray to prevent bursting.

Unusual Fire and Explosion Hazards:
Use care as spills may be slippery. Prolonged contact with reactive metals, such as Aluminum, Copper, Brass, Bronze, Chromium, Magnesium, Tin, Zinc, and alloys, can cause the formation of flammable Hydrogen Gas which can form an explosive mixture with air. The use of water spray (fog), while effective, may cause frothing and foaming. Never use a water jet as this will just spread the fire.

Section V - Health and Hazard Data

Threshold Limit Value:
Not established.

Effects of Overexposure:

Acute: (Short Term Exposure)
SKIN CONTACT: Corrosive. Causes burns and possible deep ulcerations or scarring.
EYE CONTACT: Corrosive. Causes burns, corneal damage, and possible blindness.
INHALATION: Causes burns to the respiratory tract, nose, mouth, and throat with discomfort, nasal discharge, sneezing, coughing, rapid heartbeat, and chest pain. Inhalation of mist or vapors may cause chemical pneumonitis which can cause damage and may be fatal.
INGESTION: Corrosive. Causes burns to the mouth, throat, esophagus, and stomach with nausea and pain. Symptoms may include vomiting of blood. Blood loss through damaged tissue can lead to low blood pressure and shock, and may be fatal.

Chronic: (Long Term Exposure)
Dental discoloration and erosion of exposed teeth may occur on prolonged exposure to low concentrations of hydrogen chloride vapors. May cause bronchopneumonia, chemical pneumonitis, pulmonary edema, delayed scarring of the airway, and other affected organs. Repeated inhalation of mist or vapors may cause laryngitis, bronchitis, glottal edemal, pulmonary edema and death.
Medical conditions aggravated by exposure are pre-existing respiratory and skin conditions such as asthma, emphysema, and dermatitis.
Target organs: None known. There is no primary route of entry into the body. The primary routes of exposure are skin and eye contact.

Primary Routes of Entry

[ ] Inhalation [ ] Ingestion [ ] Absorption

Emergency First Aid Procedures:

Inhalation:
Remove from the area to fresh air. If not breathing, clear the airway and start mouth to mouth artificial respiration. Get immediate medical attention.

Eye Contact:
Immediately rinse the eyes with water. Remove any contact lenses and continue flushing for at least 15 minutes. Hold the eyelids apart to ensure rinsing of

the entire surface of the eyes and lids with water. Get immediate medical attention.

Skin Contact:
Immediately remove contaminated clothing and shoes. Flush affected areas with large amounts of water for 20 to 30 minutes. Get immediate medical attention. Discard clothing and shoes.

Ingestion:
Give 3 to 4 glasses of water, but DO NOT induce vomiting. If vomiting occurs, give fluids again. Get immediate medical attention. Do not give anything by mouth to an unconscious or convulsing person.

Notes to Physician:
Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression, and convulsions may be needed. There is no specific antidote. Treat the patient symptomatically.

Section VI - Toxicity Information

Product Contains Chemicals Listed as Carcinogen or Potential Carcinogen By:

[ ] IARC [ ] NTP [ ] OSHA [ ] ACGIH [ ] Other

VOC CONTENT: 0.1 % By Weight 0.1 % By Volume; 0.1 g/l.

HYDROCHLORIC ACID
ORL-RAT LD_{50}: 700 mg/kg (30-35% Solution in water) 5.
ORL-RBT LD_{50}: 900 mg/kg (30-35% Solution in water) 4.
IHL-RAT LC_{50}: 3,124 ppm/1h (As Hydrogen Chloride) 4.
SKN-HMN SDT: 4% Solution in /24h Mild 4.
SKN-RBT: 17-37% Solution in water /4h Corrosive 5.
EYE-RBT: 30-35% Solution in water /15s Corrosive 5.

Exposures of 100 ppm for 6 hrs a day for 50 days caused only slight unrest and irritation to the eyes and nose of rabbits, guinea pigs and pigeons. The hemoglobin content of the blood was also slightly diminished. Monkeys receiving 20 exposures of 33 ppm for 6 hrs did not display any adverse effects. Higher exposures have caused weight loss which paralleled the severity of exposure. Baboons exposed to 500, 5000, or 10,000 ppm for 15 minutes did not have significant alterations in any pulmonary function parameters 3 days or 3 months after exposure. In humans, long term overexposures have been associated with erosion of teeth. 3.

Two studies on rats were conducted to determine if hydrogen chloride increased the formation of nasal tumors or increased the carcinogenic potential of formaldehyde. In both studieds the rats were exposed to 10 ppm for 6 hours a day, 5 days a week. One study lasted 84 weeks while the other lasted the animals' lifetime. Hydrogen chloride did not cause an increase in nasal tumors and did not increase the carcinogenicity of formaldehyde. 3.

Section VII - Reactivity Data

Stability

[√] Stable [ ] Unstable

Conditions to Avoid:
None known.

Hazardous Polymerization

[√] Will not occur [ ] May occur

Conditions to Avoid:
N/A

Incompatibility (Materials to Avoid):
Strong oxidizing agents such as chlorine bleach and concentrated hydrogen peroxide. Bases, cyanide, lithium silicide, metals, mercuric sulfate, perchloric acid, carbides of calcium, cesium, rubidium, acetylides of cesium and rubidium, phosphides of calcium and uranium, amines, carbonates, cyanides, metallic oxides, sulfides. Prolonged contact with reactive metals, such as aluminum, copper, brass, bronze, chromium, magnesium, tin, zinc, and alloys, can cause the formation of flammable hydrogen gas which can form an explosive mixture with air.

Hazardous Decomposition Products:
Hydrogen chloride.

Section VIII - Spill Or Leak Procedures

Steps to be Taken if Material is Released or Spilled:
Wear appropriate protective clothing. Use care as spills may be slippery. Shut off source of leak. Dike and contain spill. Absorb with an inert material and transfer all material into a properly labeled container for disposal. Prevent product from contaminating soil or from entering sewage and drainage systems and bodies of water. Flush area with water.

Waste Disposal Method(s):
Dispose of in accordance with all Federal, state, and local regulations.

Neutralizing Agent:
Use Sodium Bicarbonate or Soda Ash. Add cautiously while mixing. Wear appropriate protective equipment.

Section IX - Special Protection Information

Required Ventilation:
Local ventilation is recommended to control exposure from operations that can generate excessive levels of mists. Local ventilation is preferred, because it prevents dispersion into work areas by controlling it at its source.

Respiratory Protection:
Respirators should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134) and ANSI's standard for respiratory protection (Z88.2-1992). For concentrations above the TLV and/or PEL but less than 10 times these limits, a NIOSH approved half-facepiece respirator equipped with appropriate chemical cartridges may be used. For concentrations greater than 10 times the TLV and/or PEL, consult the NIOSH respirator decision logic found in publication No. 87-116 or ANSI Z88.2-1992.

Glove Protection:
Neoprene or nitrile rubber gloves should be worn. Ensure compliance with OSHA's personal protective equipment (PPE) standard for hand protection, 29 CFR 1910.138.

Eye Protection:
Chemical goggles and a face shield should be worn when handling. Ensure compliance with OSHA's Personal Protective Equipment (PPE) standard for eye and face protection, 29 CFR 1910.133.

Other Protection:
Wear protective clothing when handling. A safety shower and an eyewash station should be available.

Section X - Storage and Handling Information

Storage Temperature

Max: 120°F Min: 35°F

Storage Conditions

[√] Indoors [ ] Outdoors [ ] Heated [ ] Refrigerated

Precautions to be Taken in Handling and Storing:

Always store material in its original container. Keep container tightly closed when not in use. Do not store near alkalies or in aluminum containers. Empty containers may contain product residues which may exhibit the hazards of the product.

Other Precautions:

Keep out of reach of children. Read the entire label before using the product. Follow the label directions.

Section XI - Regulatory Information

Chemical Name	CAS Number	Upper % Limit
HYDROGEN CHLORIDE	7647-01-0	20

Those Ingredients listed above are subject to the reporting requirements of 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

Please call 1-800-527-9919 for additional information if you are a California customer. This MSDS is not intended for users in the state of California.

Section XII - References

1. Threshold Limit Values for chemical substances and physical agents and biological exposure indices, ACGIH, 2007.
2. OSHA PEL.
3. Vendor's MSDS.
4. Registry of toxic effects of chemical substances, CCINFOWeb, 2007.
5. European Chemical Substances Information System (ESIS), International Uniform Chemical Information Database (IUCLID) Chemical Data Sheets.
6. ChemADVISOR, Inc. Database Release: 2007-4.

All the components of this product are in compliance with the Toxic Substances Control Act (TSCA) and are either listed on the TSCA inventory or otherwise exempted from listing.

IRR: Irritant, OSHA: Occupational Safety & Health Administration, IARC: International Agency for the Research on Cancer, TOX: Toxic, NFPA: National Fire Protection Association, ppm: Parts Per Million, UEL: Upper Explosion Limit, STEL: Short-term Exposure Limit, HMN: Human, mg/m3, IHL: Inhalation, COMB: Combustible, CORR: Corrosive, MUT: Mutagenic, CARC: Carcinogenic, N/A: Not Applicable, TLV: Threshold Limit Value, N/E: Not Established, ORL: Oral, FLAM: Flammable, ASPHYX: Asphyxiant, C.O.C.: Cleveland Open Cup, PNOR: Particles Not Otherwise Regulated, LEL: Lower Explosion Limit, mg/L: Milligrams per Liter, PNOS: Particles Not Otherwise Specified, g/L: Grams per Liter, PMCC: Pensky-Martin Closed Cup, NTP: National Toxicology Program, µg/L: Micrograms per Liter, TCC: Tagliabue Closed Cup, SEV: Severe, RBT: Rabbit, INV: Intravenous, ACGIH: American Conference of Governmental Industrial Hygienists, PEL: Permissible Exposure Limit, MOD: Moderate, IPT: Intraperitoneal, gm/kg: Grams per Kilogram, C.C.C.: Cleveland Closed Cup, SKN: Skin, Milligrams per Cubic Meter, mg/kg: Milligrams per Kilogram, VOC: Volatile Organic Compound, SDT: Standard Draize Test, MSE: Mouse, GPG: Guinea Pig.