



Solve 14A

Material Safety Data Sheet

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[For Product information call 616-575-8693.](#)
EMERGENCY PHONE: For emergency involving spill, leak, fire, exposure or accident call CHEMTREC: 1-800-424-9300. Outside the USA and Canada call 708-527-3887.

I. Product Identification

Product Name: **Solve 14A**
Chemical Type: Hydrochloric Acid

CASE NUMBER	COMPONENT	WEIGHT %
7647-01-0	Hydrochloric Acid, muriatic acid	31.45-36.20

OSHA Hazard Communication Standard: *This product is considered hazardous under the OSHA Hazard Communications Standard (OSHA 29 CFR 1910.1200).*

II. Hazards Identification

Emergency Overview: Hydrochloric acid is a very strong acid. Solutions can be extremely corrosive. The severity of effects depends upon the concentration of the solution and the duration of contact.

Eye contact: Low concentrations of vapor or mist (10-35 ppm) can be immediately irritating, causing redness. Concentrated vapor, mist or splashed liquid can cause severe irritation, burns, and permanent blindness.

Skin Contact: Liquid can cause severe irritation (redness, swelling and pain), and corrosive skin damage with permanent scarring or even death. High vapor or mist concentration may cause severe irritation and burns to skin if contact is prolonged. Skin covered by perspiration or dampened clothing can also be affected.

Ingestion: Solutions can cause corrosive burns to mouth, throat, esophagus and stomach. Symptoms may include difficulty in swallowing, intense thirst, nausea, vomiting, diarrhea and in severe cases, collapse and death. Small amounts of hydrochloric acid which enters the lungs, during ingestion or aspiration while vomiting can cause serious lung injury and death.

Inhalation: Vapor or mist from concentrated solutions can cause severe nasal irritation, sore throat, choking coughing and difficulty in breathing (50-100ppm). Prolonged exposures can cause burns and ulcers to the nose and throat. Severe exposures (1,000-2,000 ppm), for even a few months can cause a life-threatening accumulation of fluid in the lungs (pulmonary edema).

Carcinogen Status: Not considered carcinogenic by IRAC, NTP or OSHA.

First Aid

Eye Contact:	Flush immediately with lukewarm water for at least 20-30 minutes. Forcibly hold eyelids apart to ensure complete irrigation of eyelid tissue. If irritation persists, repeat flushing. Get immediate medical attention.
Skin Contact:	Immediately flush with lukewarm, gently flowing water for at least 20-30 minutes. Under running water, remove contaminated clothing and shoes. Seek medical attention. Completely decontaminate clothing and shoes before reuse.
Inhalation:	Remove person from exposure area to fresh air. If breathing is difficult, oxygen may be beneficial, if administered by a person trained in its use, preferably on a physician's advice. Ensure victim is completely at rest. Do not allow any physical exertion. Symptoms may be delayed up to 48 hours after exposure. Seek medical attention if needed.
Ingestion:	If swallowed, do not induce vomiting. Give large quantities of water. If milk is available, it may be given after the water has been given. If vomiting occurs spontaneously, keep airway clear and give more water. Never give anything by mouth to unconscious individual. Seek immediate medical attention.

III. Fire and Explosion Hazard Data

Flashpoint:	Not applicable – does not burn.
Autoignition Temperature:	Not applicable
Extinguishing Agents:	Dry chemical carbon dioxide, water spray or regular foam.
Fire Fighting Precautions:	Use fighting agent suitable for surrounding fire to extinguish fire. Use water spray to keep fire exposed containers cool. Protect against decomposition products, wear positive pressure, full facepiece SCBA.
Unusual Fire and Explosion Haz.:	Contact with common metals produces hydrogen gas which may form explosive mixtures in air.

IV. Storage and Handling

<u>Storage</u>	Precautions to be taken in handling and store. Do not get in eyes, on skin or on clothing. Avoid breathing vapors or mist. Wash thoroughly after handling. Store in cool place. Keep containers tightly closed. Keep away from heat, sparks and flames. Do not mix with cyanides, sulfides or formaldehyde. Protect containers from physical damage.
Handling:	Avoid contact with skin, eyes or clothing. Wear protective clothing.

V. Accidental Release Measures/Waste Disposal

Spill or Leak Procedures:	Allow only trained personnel wearing appropriate protective equipment to be involved in the spill response. Stop leak at once. Dike area, prevent material from entering waterway, and prevent contact with strong oxidizers and reducers. Neutralize with soda ash and pump material to reclaim container. Use absorbent which does not react with spilled chemical on remaining material and shovel into disposal container.
Waste Disposal:	Dispose of waste in accordance with applicable federal, state, and local laws. Spills and releases may have to be reported to Federal and/or local authorities.

VI. Applicable Control Measures & Exposure Limits

Engineering Controls:	Local ventilation. Use sufficient ventilation to keep employee exposure below recommended limits.
Personal Protection Equipment:	
Eye Protection:	Carefully fitted gas tight chemical goggles, with approved impact resistant lenses. Eye wash station should be readily available. Do not wear contact lenses.
Skin Protection:	Impervious gloves, clothing and rubber boots are recommended. If there is any possibility of direct contact, wear a full acid suit of neoprene, vinyl or other acid resistant material with hood, gloves, boots and self-contained breathing apparatus. Safety showers recommended in all storage and handling areas.
Respiratory Protection:	Wear NIOSH/OSHA approved respirator in accordance with 29 CFR 1910.132 and 1910.134 to prevent overexposure.

Use cautions: Polyethylene and polyvinyl alcohol materials are not recommended for protection clothing. Breakthrough occurs in less than 1 hour.

VII. Typical Physical Properties

Appearance:	Pale yellow to straw yellow liquid.
Boiling point:	183(20°) and 144 (22°)
Freezing point:	-62.50(20°) and -87.00 (22°)
Odor:	Sharp, pungent
Specific gravity @ 60°F:	1.16(20°) and 1.18 (22°)
Solubility in water:	Complete
PH as is:	<1.00
Vapor pressure, mmHg@100°F:	77(20°) and 212(22°)

VIII. Reactivity Data

Stability:	Stable under normal conditions. Large amount of heat can be released when concentrated hydrochloric acid is mixed with water or organic solvents.
Materials to avoid:	Strong oxidizing agents, reducing agents, metals, bases, aldehydes, epoxides, explosives, acetylides, borides, carbides, silicides, cyanides, sulfides and phosphides. Very corrosive to most metals. Avoid heating to decomposition.
Haz. Decomposition Products:	Heat can cause evolution of gaseous hydrogen chloride.
Hazardous Polymerization:	Will not occur under normal temperatures and pressures.

NFPA RATINGS (SCALE 0-4):

Health -3
Fire -0
Reactivity -1
Special -Corrosive

IX. Transportation Information

DOT

Proper Shipping Name: Hydrochloric acid, solution
UN #: UN 1789
US DOT Hazard Class: 8
Packing Group: II
Label: Corrosive

Regulatory:

Exposure guidelines: ACGIH TLV and OSHA PEL is 5ppm ceiling.
S.A.R.A. Title: III
Section 302: Hazardous substance
Section 311,312 hazard categories: Acute and chronic
Section 313: Subject to the reporting requirements.
C.E.R.C.L.A. Reportable quantity 5,000 pounds
T.S.C.A.: Hydrochloric acid is listed.
D.O.T.

X. Toxicological/Ecological Information

LD50 (oral, rats): 5,666 pm @ 30 minute exposure, 31,008 ppm @ 5 minute exposure
LD50 (oral, rabbit): 900 mg/kg

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