

**Acid-Alcohol**

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**1. PRODUCT AND COMPANY IDENTIFICATION**

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**Product Name:** Acid-Alcohol**Synonyms/Generic Names:** HCl/Ethanol Blend**SDS Number:** 8.20**Product Use:** For Educational Use Only**Manufacturer:** Columbus Chemical Industries, Inc.  
N4335 Temkin Rd.  
Columbus, WI. 53925**For More Information Contact:** Ward's Science  
5100 West Henrietta Rd.  
PO Box 92912-9012  
Rochester, NY 14692  
(800) 962-2660 (Monday-Friday 7:30-7:00 Eastern Time)**In Case of Emergency Call:** CHEMTREC - 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

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**2. HAZARDS IDENTIFICATION**

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**OSHA Hazards:** Flammable liquid, Target organ effect, Irritant, Carcinogen, Harmful by ingestion, Corrosive**Target Organs:** Nerves, Liver, Heart**Signal Words:** Danger**Pictograms:****GHS Classification:**

Flammable liquids	Category 2
Skin irritation	Category 2
Eye irritation	Category 2A
Specific target organ toxicity – single exposure	Category 3

**GHS Label Elements, including precautionary statements:****Hazard Statements:**

H225	Highly flammable liquid and vapor.
H315	Causes skin irritation.
H319	Causes serious eye irritation
H335	May cause respiratory irritation.

**Precautionary Statements:**

P210	Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing.

**Potential Health Effects**

<b>Eyes</b>	Causes eye burns.
<b>Inhalation</b>	May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
<b>Skin</b>	Harmful if absorbed through skin. Causes skin burns.
<b>Ingestion</b>	Harmful if swallowed.

**NFPA Ratings**

<b>Health</b>	3
<b>Flammability</b>	2
<b>Reactivity</b>	0
<b>Specific hazard</b>	Not Available

**HMIS Ratings**

<b>Health</b>	2
<b>Fire</b>	3
<b>Reactivity</b>	0
<b>Personal</b>	H

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Component	Weight %	CAS #	EINECS# / ELINCS#	Formula	Molecular Weight
Ethanol	92	64-17-5	200-578-6	C <sub>2</sub> H <sub>6</sub> O	46.07 g/mol
Hydrochloric Acid	2.6	7647-01-0	231-595-7	HCl	36.46 g/mol
Water	Balance	7732-18-5	231-791-2	H <sub>2</sub> O	18.00 g/mol

**4. FIRST-AID MEASURES**

<b>Eyes</b>	Rinse with plenty of water for at least 15 minutes and seek medical attention immediately.
<b>Inhalation</b>	Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
<b>Skin</b>	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention.
<b>Ingestion</b>	<b>Do Not Induce Vomiting!</b> Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention.

**5. FIRE-FIGHTING MEASURES**

<b>Suitable (and unsuitable) extinguishing media</b>	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Use appropriate media on adjacent fires. Cool unopened containers with water.
<b>Special protective equipment and precautions for firefighters</b>	Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots. Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surfaces. No smoking.
<b>Specific hazards arising from the chemical</b>	Emits toxic fumes (carbon oxides, hydrogen chloride gas) under fire conditions. (See also Stability and Reactivity section).

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## 6. ACCIDENTAL RELEASE MEASURES

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<b>Personal precautions, protective equipment and emergency procedures</b>	See section 8 for recommendations on the use of personal protective equipment.
<b>Environmental precautions</b>	Prevent spillage from entering drains. Any release to the environment may be subject to federal/national or local reporting requirements.
<b>Methods and materials for containment and cleaning up</b>	Neutralize spill with sodium bicarbonate or lime. Absorb spill with noncombustible absorbent material, then place in a suitable container for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with regulations.

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## 7. HANDLING AND STORAGE

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### Precautions for safe handling

See section 8 for recommendations on the use of personal protective equipment. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use. Keep away from sources of ignition. No smoking. Avoid formation of aerosols.

### Conditions for safe storage, including any incompatibilities

Store in cool, dry well ventilated area. Keep away from incompatible materials (see section 10 for incompatibilities). Take measure to prevent the buildup of electrostatic charge.

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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**Occupational exposure controls:** Ventilation and appropriate grounding of containers.

Component	Exposure Limits	Basis	Entity
Ethyl Alcohol	1000 ppm 1900 mg/m <sup>3</sup>	REL	NIOSH
	1000 ppm 1900 mg/m <sup>3</sup>	PEL	OSHA
	1000 ppm 1880 mg/m <sup>3</sup>	STEL	ACGIH
Hydrogen Chloride	2 ppm 2.98 mg/m <sup>3</sup>	CEIL	ACGIH
	5 ppm 7 mg/m <sup>3</sup>	CEIL	OSHA
	5 ppm 7 mg/m <sup>3</sup>	CEIL	NIOSH

TWA: Time Weighted Average over 8 hours of work.

TLV: Threshold Limit Value over 8 hours of work.

REL: Recommended Exposure Limit

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit during x minutes.

IDLH: Immediately Dangerous to Life or Health

WEEL: Workplace Environmental Exposure Levels

CEIL: Ceiling

**Personal Protection**

<b>Eyes</b>	Wear chemical safety glasses or goggles.
<b>Inhalation</b>	Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator.
<b>Skin</b>	Wear nitrile or rubber gloves, flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
<b>Other</b>	Not Available

**Other Recommendations**

Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance (physical state, color, etc.)	Colorless liquid.
Odor	Alcohol odor.
Odor threshold	Not Available
pH	Not Available
Melting point/freezing point	-114°C (-173°F) (Ethanol)
Initial boiling point and boiling range	78°C (172°) (Ethanol)
Flash point	14°C (57.2°F) – Closed cup (Ethanol)
Evaporation rate	Not Available
Flammability (solid, gas)	Flammable
Upper/lower flammability or explosive limit	Lower: 3.3%, Upper: 19% (Ethanol)
Vapor pressure	59.5 kPa (44.6 mmHg) @ 20°C (68°F) (Ethanol)
Vapor density	Not Available
Relative density	Not Available
Solubility (ies)	Completely soluble in water
Partition coefficient: n-octanol/water	Not Available
Auto-ignition temperature	363.0°C (685.4°F) (Ethanol)
Decomposition temperature	Not Available

**10. STABILITY AND REACTIVITY**

<b>Chemical Stability</b>	Stable
<b>Possibility of Hazardous Reactions</b>	Vapors may form explosive mixture with air.
<b>Conditions to Avoid</b>	Heat, flames, and sparks. Extremes of temperature and direct sunlight.
<b>Incompatible Materials</b>	Alkali metals, ammonia, oxidizing agents, peroxides
<b>Hazardous Decomposition Products</b>	Carbon oxides, hydrogen chloride gas.

**11. TOXICOLOGICAL INFORMATION****Acute Toxicity***Ethanol*

<b>Skin</b>	Not Available
<b>Eyes</b>	Not Available
<b>Respiratory</b>	LC50 Inhalation – rat – 10 h – 20000 ppm
<b>Ingestion</b>	LD50 Oral – rat – 7,060 mg/kg

### Hydrochloric Acid

<b>Skin</b>	Not Available
<b>Eyes</b>	Not Available
<b>Respiratory</b>	LC50 Inhalation – rat – 1 h – 3124 ppm
<b>Ingestion</b>	LD50 Oral – rabbit – 900 mg/kg

### Carcinogenicity

<b>IARC</b>	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
<b>ACGIH</b>	A3: Confirmed animal carcinogen with unknown relevance to humans (ethanol).
<b>NTP</b>	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
<b>OSHA</b>	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

### Signs & Symptoms of Exposure

<b>Skin</b>	Irritation, redness.
<b>Eyes</b>	Redness, tearing, pain.
<b>Respiratory</b>	Coughing, shortness of breath, dizziness, drowsiness.
<b>Ingestion</b>	Central nervous depression, narcosis, damage to heart, dizziness, drowsiness, nausea, vomiting, diarrhea.

<b>Chronic Toxicity</b>	Not enough evidence to cause cancer in humans. -Carcinogenicity - mouse - Oral Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Liver: Tumors. Blood: Lymphomas including Hodgkin's disease.
<b>Teratogenicity</b>	Not Available
<b>Mutagenicity</b>	Not Available
<b>Embryotoxicity</b>	Not Available
<b>Specific Target Organ Toxicity</b>	Not Available
<b>Reproductive Toxicity</b>	Causes reproductive harm. -Reproductive toxicity - Human - female - Oral Effects on Newborn: Apgar score (human only). Effects on Newborn: Other neonatal measures or effects. Effects on Newborn: Drug dependence.
<b>Respiratory/Skin Sensitization</b>	Not Available

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## 12. ECOLOGICAL INFORMATION

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### Ecotoxicity

#### Ethanol

<b>Aquatic Vertebrate</b>	LC <sub>50</sub> (96 hours): 13,000 mg/L <i>Oncorhynchus mykiss</i> (Rainbow Trout)
<b>Aquatic Invertebrate</b>	Not Available
<b>Terrestrial</b>	Not Available

#### Hydrochloric Acid

<b>Aquatic Vertebrate</b>	LC50 – <i>Gambusia affinis</i> (Mosquito fish) – 282 mg/l – 96 hours
<b>Aquatic Invertebrate</b>	LC80 (72 hours): 56 mg/L ( <i>Daphnia Magna</i> )
<b>Terrestrial</b>	Not Available

<b>Persistence and Degradability</b>	Not Available
<b>Bioaccumulative Potential</b>	Will not accumulate (Ethanol)
<b>Mobility in Soil</b>	Not Available
<b>PBT and vPvB Assessment</b>	Not Available
<b>Other Adverse Effects</b>	Not Available

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### 13. DISPOSAL CONSIDERATIONS

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<b>Waste Residues</b>	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste products or residues.
<b>Product Containers</b>	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container.

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

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### 14. TRANSPORTATION INFORMATION

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US DOT	UN2924, Flammable liquids, corrosive, n.o.s., (Ethyl alcohol and Hydrochloric acid), 3, (8), pg II
TDG	UN2924, FLAMMABLE LIQUID, CORROSIVE, N.O.S., (ETHYL ALCOHOL AND HYDROCHLORIC ACID), 3, (8), pg II
IMDG	UN2924, FLAMMABLE LIQUID, CORROSIVE, N.O.S., (ETHYL ALCOHOL AND HYDROCHLORIC ACID), 3, (8), pg II
Marine Pollutant	No
IATA/ICAO	UN2924, Flammable liquid, corrosive, n.o.s., (Ethyl alcohol and Hydrochloric acid), 3, (8), pg II

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### 15. REGULATORY INFORMATION

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TSCA Inventory Status	All ingredients are listed on the TSCA inventory.
DSCL (EEC)	All ingredients are listed on the DSCL inventory.
California Proposition 65	Ethyl Alcohol (in alcoholic beverages)
SARA 302	Listed: Hydrochloric Acid
SARA 304	Listed: Hydrochloric Acid
SARA 311	Fire Hazard, Acute Health Hazard, Chronic Health Hazard
SARA 312	Fire Hazard, Acute Health Hazard, Chronic Health Hazard
SARA 313	Listed: Ethyl Alcohol, Hydrochloric Acid
WHMIS Canada	Class B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). Class E: Corrosive liquid Class D- 2A: Material causing other toxic effects (very toxic)

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## 16. OTHER INFORMATION

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Revision	Date
Revision 1	01/28/2013
Revision 2	06/19/2013

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