1. **Identification**

   **Product Identifier:** HYDROCHLORIC ACID in METHANOL  
   **Synonyms:** None  
   **Chemical Formula:** Not applicable to mixtures  
   **Recommended Use of the Chemical and Restrictions On Use:** Industrial Reagent  
   **Manufacturer / Supplier:** Puritan Products; 2290 Avenue A, Bethlehem, PA  18017  
   **Phone:** 610-866-4225  
   **Emergency Phone Number:** 24-Hour Chemtrec Emergency Telephone 800-424-9300

2. **Hazard(s) Identification**

   **Classification of the Substance or Mixture:**  
   Flammable liquids (Category 2)  
   Acute toxicity, Oral (Category 3)  
   Acute toxicity, Inhalation (Category 3)  
   Acute toxicity, Dermal (Category 3)  
   Skin corrosion (Category 1A)  
   Serious eye damage (Category 1)  
   Specific target organ toxicity - single exposure (Category 1)

   **Risk Phrases:**  
   R11: Highly flammable.  
   R23/24/25: Toxic by inhalation, in contact with skin and if swallowed.  
   R37: Irritating to respiratory system.  
   R39: Danger of very serious irreversible effects.

   **Label Elements:**

   **Trade Name:** HYDROCHLORIC ACID in METHANOL  
   **Signal Word:** Danger

---

**Effective Date:** 06/19/17  
**Replaces Revision:** 11/03/14, 09/08/11, 01/01/13
Hazard Statements:
H225: Highly flammable liquid and vapor.
H301 + H311 + 331: Toxic if swallowed, in contact with skin or if inhaled.
H314: Causes severe skin burns and eye damage.
H370: Causes damage to organs.

Precautionary Statements:
P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P260: Do not breathe dust/fume/gas/mist/vapors/spray.
P280: Wear protective gloves/protective clothing.
P310: Immediately call a POISON CENTER or doctor/physician.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310: Immediately call a POISON CENTER or doctor/physician.

3. Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS Number</th>
<th>EC Number</th>
<th>Percent</th>
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<th>Chemical Characterization</th>
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<td>200-659-6</td>
<td>80 - 90%</td>
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<tr>
<td>Hydrogen Chloride</td>
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<td>231-595-7</td>
<td>1 - 10%</td>
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<td>Substance</td>
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<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>231-791-2</td>
<td>1 - 15%</td>
<td>No</td>
<td>Mixture</td>
</tr>
</tbody>
</table>

4. First-aid Measures

In all cases, immediately call a POISON CENTER or doctor/physician.

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give Oxygen. Get medical attention immediately.

Ingestion: DO NOT INDUCE VOMITING unless directed by a physician! Give large amounts of water to drink. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Skin Contact: In case of contact, wash with soap and plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately.

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire-fighting Measures

Fire: Flammable liquid and vapor! Flash point: 12C (54F) CC / Autoignition temperature: 464C (867F)
Flammable limits in air % by volume: lel: 7.3; uel: 36

Explosion: Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Moderate explosion hazard and dangerous fire hazard when exposed to heat, sparks or flames. Sensitive to static discharge.

Fire Extinguishing Media: Water spray, dry chemical, alcohol foam, or carbon dioxide.

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. Use water spray to blanket fire, cool fire exposed containers, and to flush non-ignited spills or vapors away from fire. Vapors can flow along surfaces to distant ignition source and flash back.
6. Accidental Release Measures

**Personal Precautions, Protective Equipment and Emergency Procedures:** Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

**Environmental Precautions and Methods and Materials for Containment and Cleaning Up:** Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e.g., vermiculite, dry sand, earth,) and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

7. Handling and Storage

**Precautions for Safe Handling and Conditions for Safe Storage, Including Any Incompatibilities:** Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid.) Observe all warnings and precautions listed for the product. DO NOT attempt to clean empty containers since residue is difficult to remove. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, sparks, flame, static electricity or other sources of ignition: they may explode and cause injury or death.

8. Exposure Controls / Personal Protection

**Airborne Exposure Limits:**

For Methyl Alcohol:
- OSHA Permissible Exposure Limit (PEL): 200 ppm (TWA)
- ACGIH Threshold Limit Value (TLV): 200 ppm (TWA), 250 ppm (STEL) skin

For HCl:
- OSHA Permissible Exposure Limit (PEL): 5 ppm (Ceiling)
- ACGIH Threshold Limit Value (TLV): 2 ppm (Ceiling), A4 Not classifiable as a human carcinogen

**Ventilation System:** A system of local and / or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

**Personal Respirators (NIOSH Approved):** If the exposure limit is exceeded and engineering controls are not feasible, wear a supplied air, full face piece respirator, air-lined hood, or full face piece, self-contained breathing apparatus. Breathing air quality must meet the requirements of the OSHA respiratory protection standard (29CFR1910.134).

**Skin Protection:** Rubber or neoprene gloves and additional protection including impervious boots, apron, or coveralls, as needed in areas of unusual exposure.

**Eye Protection:** Use chemical safety goggles and / or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.
9. Physical and Chemical Properties

Appearance: Clear, colorless liquid
Odor: Characteristic odor
Odor Threshold: Not determined
pH: No information found
% Volatiles by volume @ 21C (70F): No information found
Melting Point: -98.0C (-144.4 F)
Boiling Point / Boiling Range: 64.0 - 65.0C (147.2 - 149.0F) at 1,013 hPa (760 mmHg)
Flash Point: 11C (52F) CC
Evaporation Rate (BuAC=1): No information found
Flammability: Flammable vapor and liquid
Upper / Lower Flammability or Explosive Limits: Upper – 36 / Lower – 7.3
Vapor Pressure (mm Hg): 130.3 hPa (97.7 mmHg) at 20.0C (68.0F) / 546.6 hPa (410.0 mmHg) at 50.0C (122.0F)
Vapor Density (Air=1): > 1
Relative Density: 0.831 g/mL at 20C (68F)
Solubility: Miscible in water
Partition Coefficient: n-octanol / water: No information found
Auto-ignition Temperature: 464C (867F)
Decomposition Temperature: No information found
Viscosity: No information found

10. Stability and Reactivity

Reactivity and / or Chemical Stability: Stable under ordinary conditions of use and storage.

Possibility of Hazardous Reactions and Conditions to Avoid: Heat, flames, ignition sources and incompatibles.

Incompatible Materials: Strong oxidizing agents such as nitrates, perchlorates or Sulfuric Acid. Will attack some forms of plastics, rubber, and coatings. May react with metallic Aluminum and generate Hydrogen gas.

Hazardous Decomposition Products: May form Carbon Dioxide, Carbon Monoxide, and Formaldehyde when heated to decomposition.

11. Toxicological Information

Emergency Overview: POISON! DANGER! VAPOR HARMFUL. CORROSIVE. MAY BE FATAL OR CAUSE BLINDNESS IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. CANNOT BE MADE NONPOISONOUS. FLAMMABLE LIQUID AND VAPOR. CAUSES SEVERE BURNS TO ALL BODY TISSUE, EYES AND RESPIRATORY TRACT. AFFECTS THE LIVER.

Potential Health Effects:

Inhalation: A slight irritant to the mucous membranes. Toxic effects exerted upon nervous system, particularly the optic nerve. Once absorbed into the body, it is very slowly eliminated. Symptoms of overexposure may include headache, drowsiness, nausea, vomiting, blurred vision, blindness, coma, and death. A person may get better but then worse again up to 30 hours later. The Hydrochloric Acid component is corrosive and inhalation of vapors can cause coughing, choking, inflammation of the nose, throat, and upper respiratory tract, and in severe cases, pulmonary edema, circulatory failure, and death.


Skin Contact: Methyl Alcohol is a defatting agent and may cause skin to become dry and cracked. Skin absorption can occur; symptoms may parallel inhalation exposure. Hydrochloric Acid is corrosive and can cause redness, pain, and severe skin burns. Concentrated solutions cause deep ulcers and discolor skin.
Eye Contact: Corrosive. Vapors are irritating and may cause damage to the eyes. Contact may cause severe burns and permanent eye damage.

Chronic Exposure: Marked impairment of vision and enlargement of the liver has been reported. Repeated or prolonged exposure may cause skin irritation. Long-term exposure to concentrated vapors may cause erosion of teeth.

Aggravation of Pre-existing Conditions: Persons with pre-existing skin disorders or eye problems or impaired liver or kidney function may be more susceptible to the effects of the substance.

Specific Target Organ Toxicity - Single Exposure (Globally Harmonized System:) Causes damage to organs.

Specific Target Organ Toxicity - Repeated Exposure (Globally Harmonized System:) No data available.

Numerical Measures of Toxicity: Cancer Lists: NTP Carcinogen

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Known</th>
<th>Anticipated</th>
<th>IARC Category</th>
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<td>Hydrogen Chloride (7647-01-0)</td>
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<td>No</td>
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<tr>
<td>Water (7732-18-5)</td>
<td>No</td>
<td>No</td>
<td>None</td>
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</table>

Acute Toxicity:

For Methyl Alcohol:
- Oral rat LD50: 5628 mg/kg; inhalation rat LC50: 64000 ppm/4H; skin rabbit LD50: 15800 mg/kg;
- Irritation data-standard Draize test: skin, rabbit: 20mg/24 hr. Moderate; eye, rabbit: 100 mg/24 hr. Moderate.
Investigated as a mutagen, reproductive effector.

For Hydrochloric Acid:
- Inhalation rat LC50: 3124 ppm/1H; Oral rabbit LD50: 900 mg/kg.
Investigated as a tumorigen, mutagen, reproductive effector.

12. Ecological Information

Ecotoxicity: This material is expected to be toxic to aquatic life.
For Methyl Alcohol:
- Toxicity to fish LC50 - Oncorhynchus mykiss (rainbow trout) - 19,000.00 mg/l - 96 h / mortality LC50 - Lepomis macrochirus (Bluegill) - 15,400 mg/l - 96 h
- Toxicity to daphnia and other aquatic invertebrates - EC50 - Daphnia magna (Water flea) - 24,500.00 mg/l - 48 h / EC100 - Daphnia magna (Water flea) - 10,000.00 mg/l - 24 h
- Toxicity to algae Growth inhibition EC50 - Scenedesmus capricornutum (fresh water algae) - 22,000 mg/l - 96 h
For HCl:
- LC50 862 mg/l (Orfe, golden (Leuciscus Idus))

Persistence and Degradability:
For Methyl Alcohol:
When released into the soil, this material is expected to readily biodegrade. When released into water, this material is expected to readily biodegrade. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals.
For HCl:
- When released into the soil, this material is not expected to biodegrade.

Bioaccumulative Potential:
For Methyl Alcohol:
- Bioaccumulation Cyprinus carpio (Carp) - 72 d at 20C
- Bioconcentration factor (BCF): 1.0
For HCl: No further relevant information available.

Mobility in Soil: When released into the soil, Methanol is expected to quickly evaporate. When released into the soil, both Methanol and HCl are expected to leach into groundwater.
**Other adverse effects:** When released into the water, this material is expected to have a half-life between 1 and 10 days. When released into air, this material is expected to have a half-life between 10 and 30 days. When released into the air, this material is expected to be readily removed from the atmosphere by wet deposition.

### 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a 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.

### 14. Transport Information

**UN Number:** UN2924  
**UN Proper Shipping Name:** FLAMMABLE LIQUIDS, N.O.S. (CONTAINS METHANOL & HYDROCHLORIC ACID)  
**Packing Group:** II

![DOT | IMDG | IATA](image)

**Land Transport ADR/RID and GGVS/GGVE (Cross Border / Domestic)**  
Transport Hazard Class(es): 3, 8

**Maritime Transport IMDG/GGVSea**  
Transport Hazard Class(es): 3, 8  
Marine Pollutant: No

**Air Transport ICAO-TI and IATA-DGR**  
Transport Hazard Class(es): 3, 8

**Transport in Bulk according to Annex II of MARPOL 73/78 and the IBC Code**

**Special Precautions for User:** No additional information

### 15. Regulatory Information

#### Chemical Inventory Status – Part 1

<table>
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<tr>
<th>Ingredient</th>
<th>TSCA</th>
<th>EC</th>
<th>Japan</th>
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#### Chemical Inventory Status – Part 2

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Federal, State & International Regulations - Part 1

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Federal, State & International Regulations - Part 2

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Chemical Weapons Convention: No  
TSCA 12(b): No  
CDTA: Yes  
SARA 311/312:  
Acute: Yes  
Chronic: Yes  
Fire: Yes  
Pressure: No  
Reactivity: No  
Mixture / Liquid

**16. Other Information**

Revision 06/19/17 – modified Effective Date

**Revision History:** 11/03/14 – Removed 6.1 from DOT Transport Information  
01/01/13 – GHS Release, 09/08/11 – Initial Release

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