



**FORMULA 990™**

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Date Prepared: September 25, 2019  
SDS No.: 3200

**SECTION 1: IDENTIFICATION**

**Product name:** FORMULA 990

**Recommended use:** Scale and rust remover

**Physical Description:** Clear dark brown liquid with pungent odor

**Generic Ingredients:** Water, hydrochloric acid, and corrosion inhibitor

**Manufacturer:**

Penetone Corporation  
125 Kingsland Ave.  
Clifton, NJ 07014  
800-631-1652 or 201-567-3000

**Business Contact:**

Customer Service  
800-631-1652 x2602 or 2272  
Product Safety  
800-631-1652 x2211 or 2257

**Emergency Phone Numbers:** PENETONE 201-567-3000 CHEMTREC 800-424-9300

**SECTION 2: HAZARDS IDENTIFICATION**

**GHS CLASSIFICATION:**

<p><b>Health:</b> Skin corrosion: 1B Eye damage: 1</p>	<p>Specific target organ toxicity - single exposure: 3 <b>Physical:</b> Corrosive to metals: 1</p>
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**DANGER!**

Causes Severe Skin Burns and Eye Damage.  
May Cause Respiratory Irritation.  
May Be Corrosive to Metals.



<p><b>Precautionary Statements:</b></p>	
<p><u>Prevention:</u> Do not breathe mists if inhalable mists occur during use. Use only outdoors or in a well ventilated area. Wear protective gloves, clothing, eye protection, and face protection. Wash hands and exposed skin thoroughly after handling. Keep only in original container.</p> <p><u>Response:</u> <i>If swallowed:</i> Rinse mouth. Do NOT induce vomiting. <i>If on skin or hair:</i> Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. <i>If in eyes:</i> Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p>	<p><i>If inhaled:</i> Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center, doctor, emergency room, or 911. Absorb spillage to prevent material damage.</p> <p><u>Storage:</u> Store locked up. Store in a well ventilated place. Keep container tightly closed. Store in corrosive resistant container, plastic (HDPE) is recommended, or container with a resistant inner liner.</p> <p><u>Disposal:</u> Dispose of contents/container in accordance with local, regional, and national regulations (see Sections 13 and 15 of SDS for disposal and reporting requirements).</p>

**SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS**

Chemical Name	CAS#	Concentration Wt% (1)
Water	7732-18-5	60-80
Hydrochloric Acid	7647-01-0	20-40
Alkoxylated Fatty polyamines and fatty amines	proprietary	<1

(1) Exact percentages being withheld under trade secret provision of OSHA HCS 1910.1200(i)



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**SECTION 4: FIRST-AID MEASURES**

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**General Description of Symptoms & First-Aid Measures**

Most likely work-place exposure routes will be *skin contact* or *inhalation*.

For *skin contact*, tingling or burning sensation might be felt almost immediately. Reddening or minor irritation could also develop if product is not quickly washed off. If product is not quickly washed off or left in contact with skin for some time, skin burns will result.

*Inhalation* exposure may produce varied effects, particularly if exposure occurs above the recommended workplace exposure limits (see SECTION 8). Typical symptoms could include coughing, sneezing, and a tingling or burning sensation in the nose, throat, and lungs.

**Note: This product is very corrosive to all tissue, and immediate action is required to avoid serious injury or permanent damage to exposed tissue.**

**Eyes**

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a local Poison Control Center, doctor, physician or other competent medical authority for medical advice. Penetone recommends that after any eye exposure a physician be seen immediately.

**Ingestion**

If swallowed: Rinse mouth. **DO NOT INDUCE VOMITING.** Immediately call a poison center, doctor, physician or other competent medical authority for medical advice.

**Inhalation**

If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a local Poison Control Center, physician, or other competent medical authority for medical advice.

**Skin**

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. A mild soap may be used to wash skin. Wash contaminated clothing before reuse. Immediately call a local Poison Control Center, doctor, physician or other competent medical authority for medical advice.

**Special Treatment / Other**

None

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**SECTION 5: FIRE FIGHTING MEASURES**

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**Flammable Properties**

**Classification:** Non-flammable

**Flash Point:** None-to-boil

**Autoignition Temperature:** not determined

**Lower Flammable Limit:** Not applicable **Upper Flammable Limit:** Not applicable

**Specific Hazards**

Product is water based and water dilutable, and although not a fire hazard, open containers may give off hydrochloric acid vapors. Spilled product may react with metals to form flammable hydrogen gas.

**Extinguishing Media**

Use extinguishing agents appropriate for controlling surrounding fire.

**Unsuitable:** None.

**Protection & Precautions for Firefighters**

**Protective Equipment & Clothing:** Wear positive pressure self-contained breathing apparatus (SCBA). Structural



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firefighters protective clothing will only provide limited protection.

**Fire Fighting Guidance:** Cool containers with flooding quantities of water until well after fire is out. Move containers from fire area if you can do it safely. Dike fire control water for later disposal; do not scatter material. Containers can expand and explode under fire conditions due to vapor buildup. Always stay away from containers engulfed in fire.

**Hazardous Combustion Products:** Hydrochloric acid.

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**SECTION 6: ACCIDENTAL RELEASE MEASURES**

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**Land Spill**

Absorb spillage to prevent material damage. Stop leak if you can do it safely. For large spills, dike and pump into properly labeled containers for reclamation or disposal. For small spill, soak up with absorbent material and place in properly labeled containers for disposal. Neutralize residue with dilute base and follow with a liberal covering of sodium bicarbonate or other acceptable drying agent.

**Water Spill**

This is a water based product and will completely mix/dissolve in water making recovery difficult. This product is acidic and may lower the pH of surface waters with low buffering capacity. Check with local environmental regulatory agencies for reporting requirements.

**See SECTION 8 for EXPOSURE CONTROLS and PERSONAL PROTECTION.**

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**SECTION 7: HANDLING & STORAGE**

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**Handling**

Avoid contact with eyes, skin and clothing. After handling, always wash hands thoroughly with soap and water. Avoid personal contact with any residue. Do not cut, weld, or reuse empty container.

**Storage**

Store locked up. Keep container tightly closed when not in use. Store in corrosive resistant container. Plastic (HDPE) is recommended. Do not store near strong bases. Do not store in direct sunlight. Avoid storing above 120°F (49°C).

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**SECTION 8: EXPOSURE CONTROLS and PERSONAL PROTECTION**

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**Engineering Controls**

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits.

**Personal Protection**

**Inhalation** A respiratory protection program that meets OSHA's 29 CFR 1910.134 or ANSI Z88.2 requirements must be followed whenever workplace conditions warrant respirator use. Use of an organic vapor mask or respirator is recommended.

**Skin** Wear chemical resistant gloves such as: rubber, nitrile, neoprene, or latex when skin contact is possible. Protective clothing including gloves, apron, sleeves, boots, head and face protection should be worn depending on how the product is used. PPE should be cleaned thoroughly after each use.

**Eyes** Penetone recommends always wearing safety glasses as a minimum in any workplace. Conditions may warrant the use of chemical goggles and possibly a face shield. Consult your standard operating procedure or safety professional for advice. Use protective eye and face devices that comply with ANSI Z87.1-1987.



# SAFETY DATA SHEET

Penetone® Corporation, 125 Kingsland Ave., Clifton, NJ 07014

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### Additional Remarks

Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the hazards and/or potential hazards that may be encountered during use.

### Occupational Exposure Limits

<u>Component Name</u>	<u>Source</u>	<u>Value</u>	<u>Type</u>	<u>Notation</u>
Hydrochloric acid	ACGIH	2 ppm	C	A4
	NIOSH	5 ppm	C	
	OSHA	5 ppm	C	

## SECTION 9: PHYSICAL & CHEMICAL PROPERTIES

**Appearance:** clear dark brown liquid

**Odor:** pungent

**Odor Threshold:** not determined

**pH:** <1

**Melting Point / Freezing:** about 25°F

**Boiling Point / Boiling Point Range:** about 212°F

**Flash Point:** not applicable

**Evaporation Rate:** equal to water

**Flammability:** not applicable

**Lower Flammable Limit:** not applicable

**Upper Flammable Limit:** not applicable

**Explosive Properties:** not applicable

**Vapor Pressure:** equal to water

**Relative Vapor Density:** equal to water

**Relative Density:** 1.165

**Solubility (Water):** soluble in water

**Partition Coefficient ( $K_{ow}$ ):** not determined

**Auto-ignition temperature:** not applicable

**Decomposition temperature:** not applicable

**Viscosity:** less than 5 centipoise at room temperature

## SECTION 10: STABILITY & REACTIVITY

### Reactivity

Product will react with bases, such as metal oxides, metal hydroxides, amines, carbonates, and alkaline materials. Reaction with these products can be vigorous, with generation of heat, and potential splattering. Product will react with metals, generating highly flammable hydrogen gas.

### Chemical Stability

Stable.

### Hazardous Reactions

Mixing with bases will give off heat and may cause splattering. Hazardous polymerization will not occur.

### Conditions to Avoid

Do not store near bases, metal oxides, metal hydroxides, strong bases, amines, carbonates, and alkaline materials.



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**Incompatible Materials**

Product is incompatible with cyanide, sulfides, sulfites, and formaldehyde. Mixing with these materials may generate highly toxic gases.

**Hazardous Decomposition Products**

Highly corrosive hydrogen chloride fumes will be given off when heated.

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**SECTION 11: TOXICOLOGICAL INFORMATION**

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**Product Summary**

This product contains hydrochloric acid. Contact with skin and/or eyes, ingestion, or inhalation of spray mist is corrosive. Possible effects may include severe irritation, burns, and permanent damage to exposed tissues if immediate action is not taken.

**Acute Toxicity:**

**Dermal:** LD50 >5,010 mg/kg (31.5% HCl) rabbit; LC50 1449 mg/kg mouse

**Inhalation:** LC50 1.68 mg/l 1h rat; LC50 4.72 mg/l 1h rat

**Oral:** LD50 700 mg/kg (31.5% HCl) rat

**Skin Corrosion/Irritation**

Corrosive to skin.

**Serious Eye Damage/Irritation**

Corrosive to eyes.

**Sensitization - Respiratory or Skin**

Dermal: non-sensitizer (mouse, mouse ear swelling test and human, patch test)

**Germ Cell Mutagenicity**

Various in vitro tests, including Ames using bacteria with and without metabolic activation, gene mutation assay using mammalian cells with and without metabolic activation, and chromosome aberration test using Chinese hamster ovary cells with and without metabolic activation gave positive and negative results in each test. In vivo test (Drosophila SLRL test) was positive.

**Carcinogenicity**

Rat, male, inhalation, 128 weeks, 6 hrs/day, 5 days/week: No carcinogenic effects observed at the doses tested. (Dose not indicated).

Hydrochloric acid is listed by ACGIH as Group 4: not classifiable as a human carcinogen and by IARC as Group 3: not classifiable as to its carcinogenicity to humans.

**Reproductive / Developmental Toxicity**

Rat, female, inhalation, NOAEL (teratogenicity): 0.45 mg/l, NOAEL (maternal): <0.45 mg/l. Exposure measured during pre-mating and gestation. Fetotoxicity seen only with maternal toxicity. No teratogenic effects observed at doses tested.

**Specific Target Organ Effects - Single Exposure**

Single exposure above the recommended exposure limits may result in respiratory tract irritation.

**Specific Target Organ Effects - Repeated or Prolonged Exposure**

7 weeks, inhalation: NOAEL: 0.015 mg/l guinea pig, male

13 weeks, inhalation: NOAEL: 20 ppm, LOAEL: 50 ppm, guinea pig, male/female, 6 hrs/day, 5 days/week.

**Aspiration Hazard**

No data available. Because of the corrosiveness of product, it should be considered to pose an aspiration hazard.



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**SECTION 12: ECOLOGICAL INFORMATION**

**Product Summary**

This material is acidic and will lower the pH of surface waters with low buffering capacity. Although the product considered nontoxic to aquatic organisms, harmful short term effects can be expected due to the pH shift.

**Ecotoxicity**

Mosquitofish LC50 282 mg/l (pH 6.0-8.2) 96h

**Persistence and Degradability**

Not applicable to inorganic substances.

**Other Adverse Effects**

None known.

**SECTION 13: DISPOSAL CONSIDERATIONS**

**Product is a D002 Corrosive Hazardous Waste** under RCRA definitions. Dispose of contents/container in accordance with all applicable federal, state, and local regulations.

**Note:** Contaminated product, soil, water, container residues and spill cleanup materials may be hazardous wastes. Appropriate hazardous waste designation is the responsibility of the user.

**SECTION 14: TRANSPORT INFORMATION**

**ID No.:** UN1789  
**Proper Shipping Name:** HYDROCHLORIC ACID SOLUTION  
**Hazard Class:** 8  
**Packing Group:** II  
**Label:** CORROSIVE  
**Marine Pollutant:** no  
**RQ:** 16,000 lbs (about 1600 gallons) of product for hydrogen chloride  
**Special Precautions:** none

**SECTION 15: REGULATORY INFORMATION**

**TSCA**

The ingredients in this product are listed on the TSCA inventory.

**RCRA HAZARD CLASS**

D002 corrosive hazardous waste

**SARA 311/312 REPORTABLE HAZARD CATEGORIES:** Immediate (Acute) Health

**REPORTING REQUIREMENTS** (all quantities in pounds)

Component	CAS / 313 Code	Section 302 (EHS) TPQ	Section 304 EHS RQ	CERCLA RQ	Section 313	CAA 112(r) TQ	CWA / OPA
Hydrochloric acid	7647-01-0			5,000	313		



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Product RQ for component				16,000 1,600 gal			
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**NEW JERSEY RIGHT-TO-KNOW INFORMATION**

This product contains water (CAS# 7732-18-5) and hydrochloric acid (CAS# 7647-01-0).

**CALIFORNIA PROPOSITION 65 INFORMATION**

This product does not contain any chemicals recognized by the state of California to cause cancer and/or birth defects or reproductive harm.

**SCAQMD INFORMATION**

Is there a photochemically reactive material present? No  
 What is the % by volume of photochemically reactive material? 0  
 What is the VOC content? 0  
 What is the vapor pressure of VOC's? 0

**SECTION 16: OTHER INFORMATION**

**REVISION SUMMARY**

Change in Section 1

**SUPERSEDES ISSUE DATE**

April 1, 2015

**HAZARD RATING SYSTEMS:**

	<u>HMIS</u>	<u>NFPA</u>
HEALTH	3	3
FLAMMABILITY	0	0
REACTIVITY	0	0
	B	

**KEY**  
 4 = Severe  
 3 = Serious  
 2 = Moderate  
 1 = Slight  
 0 = Minimal

FOR ADDITIONAL PRODUCT INFORMATION, CONTACT YOUR SALES ENGINEER  
 FOR ADDITIONAL HEALTH/SAFETY INFORMATION, CALL 201-567-3000

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