



**INHIBISOL® OS**

Page: 1 of 8  
Date Prepared: March 15, 2015  
MSDS No.: 4780

**SECTION 1: IDENTIFICATION**

**Product name:** INHIBISOL OS

**Recommended use:** Degreasing, vapor degreasing

**Physical Description:** Clear water white liquid with halogenated solvent odor

**Generic Ingredients:** Halogenated solvent

**Manufacturer:**

Penetone Corporation  
700 Gotham Parkway  
Carlstadt, NJ 07072  
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> Eye irritation: 2A Skin irritation: 2 Germ cell mutagenicity: 2</p>	<p>Specific target organ toxicity - single exposure: 3, central nervous system Carcinogenicity: 1B <b>Physical:</b> Not classified</p>
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**DANGER!**

Causes Skin Irritation and Serious Eye Irritation.  
May Cause Drowsiness or Dizziness.  
Suspected of Causing Genetic Defects.  
May Cause Cancer.



<p><b>Precautions:</b></p>	
<p><u>Prevention:</u> Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breath fumes/mist/vapor/spray. Use only outdoors or in a well ventilated area. Wear protective gloves/protective clothing/eye and face protection. Wash hands and exposed skin thoroughly after handling.</p> <p><u>Response:</u> <i>If exposed or concerned:</i> Get medical advice/attention. <i>If on skin:</i> Wash with plenty of water. A mild soap may be used. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention.</p>	<p><i>If in eyes:</i> Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. <i>If inhaled:</i> Remove person to fresh air and keep comfortable for breathing. Call a pois on center/doctor/emergency room/911 if you feel unwell.</p> <p><u>Storage:</u> Store locked up. Store in a well ventilated place. Keep container tightly closed.</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**

<p><b>Chemical Name</b> Trichloroethylene</p>	<p><b>CAS#</b> 79-01-6</p>	<p><b>Concentration Wt%</b> 100</p>
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**INHIBISOL® OS**

Page: 2 of 8  
Date Prepared: March 15, 2015  
MSDS No.: 4780

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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*, typically no immediate effects will be observed. A slight tingling sensation might be felt some time after exposure. Slight reddening or minor irritation could also develop if product is not quickly washed off. Repeated exposure may cause skin dryness or cracking.

*Inhalation* of mist may result in minor discomfort to the upper respiratory tract (nose and throat). Typical symptoms could include coughing and sneezing. *Inhalation* of vapors may produce varied effects, particularly if exposure occurs above the recommended workplace exposure limits (see SECTION 8). Typical symptoms would include headaches, dizziness, and drowsiness. In extreme cases, unconsciousness and other central nervous effects may occur.

**Eyes**

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists or develops: Get medical advice or attention. Penetone recommends that after any eye exposure a physician be seen immediately.

**Ingestion**

If swallowed: Rinse mouth. Do NOT induce vomiting. Call a poison center, doctor, physician or other competent medical authority if you feel unwell.

**Inhalation**

If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center, doctor, physician or other competent medical authority if you feel unwell.

**Skin**

If on skin: Wash with plenty of water or a mild soap. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice or attention.

**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, TCC

**Autoignition Temperature:** 770°F (410°C)

**Lower Flammable Limit:** 8.0% **Upper Flammable Limit:** 44.8%

**Specific Hazards**

Product has a very low boiling point of around 188°F. Containers can expand and explode under fire conditions due to vapor buildup.

**Extinguishing Media**

**Suitable:** SMALL FIRE: Use dry chemical, carbon dioxide (CO<sub>2</sub>), water spray or regular foam. LARGE FIRE: water spray, water fog, or foam.

**Unsuitable:** Do not use solid water stream as this may spread fire.

**Protection & Precautions for Firefighters**

**Protective Equipment & Clothing:** Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters protective clothing will only provide limited protection.



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**INHIBISOL® OS**

Page: 3 of 8  
Date Prepared: March 15, 2015  
MSDS No.: 4780

---

**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:** Smoke, fumes, and oxides of carbon and chlorine, hydrogen chloride and traces of phosgene and chlorine.

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**SECTION 6: ACCIDENTAL RELEASE MEASURES**

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**Land Spill**

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. Product vapors are heavier than air and will concentrate in low areas. Keep personnel out of low, confined, or poorly ventilated areas. Keep upwind of spill. Ventilate area of leak or spill. Confined space entry procedures may be required.

**Water Spill**

Product is much denser than water and will sink making recovery difficult. 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**

Keep container tightly closed when not in use. Do not store in direct sunlight. Avoid storing above 120°F (49°C). Do not store near oxidizing agents. Do not store in zinc, aluminum, aluminum alloys, or plastic.

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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.

**Additional Remarks**

Selection of appropriate personal protective equipment should be based on an evaluation of the performance



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**INHIBISOL® OS**

Page: 4 of 8  
Date Prepared: March 15, 2015  
MSDS No.: 4780

---

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>
Trichloroethylene	ACGIH	10 ppm	TWA	A2; BEI
		25 ppm	STEL	
	NIOSH OSHA Z2	25 ppm	TWA	Ca Appendices A&C
		100 ppm	TWA	
		200 ppm	C	
		300 ppm	C	
				5 minutes max peak in any 2 hours

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**SECTION 9: PHYSICAL & CHEMICAL PROPERTIES**

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**Appearance:** Clear water white liquid  
**Odor:** Halogenated  
**Odor Threshold:** Not determined  
**pH:** Not applicable  
**Melting Point / Freezing:** -121°F (-85°C)  
**Boiling Point / Boiling Point Range:** 188°F (87°C)  
**Flash Point:** None to boiling point, Tag closed cup  
**Evaporation Rate:** less than 1 (n-butyl acetate =1)  
**Flammability:** Not applicable  
**Lower Flammable Limit:** 8%  
**Upper Flammable Limit:** 44.8%  
**Explosive Properties:** Not applicable  
**Vapor Pressure:** 74 mm Hg @ 25°C  
**Relative Vapor Density:** 4.5  
**Relative Density:** 1.465 at 68°F (20°C)  
**Solubility (Water):** 1.1 g/l (0.11%) at 20°C  
**Partition Coefficient (P<sub>ow</sub>):** Log P<sub>ow</sub> 2.53  
**Auto-ignition temperature:** 770°F (410°C)  
**Decomposition temperature:** Not available  
**Viscosity:** less than 5 centipoise at room temperature

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**SECTION 10: STABILITY & REACTIVITY**

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**Reactivity**

No dangerous reactions known under normal use conditions.

**Chemical Stability**

Stable.

**Hazardous Reactions**

Hazardous polymerization will not occur.

**Conditions to Avoid**

Exposure to elevated temperatures can cause product to decompose. Avoid open flames, welding arcs, or other high temperature sources which induce thermal decomposition. Avoid direct sunlight or ultraviolet sources.



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**INHIBISOL® OS**

Page: 5 of 8  
Date Prepared: March 15, 2015  
MSDS No.: 4780

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**Incompatible Materials**

Avoid contact with strong bases and oxidizers. Can react with strong alkali metal hydroxides to form dichloroacetylene which can spontaneously ignite in air. Avoid contact with reactive metals such as zinc, aluminum, magnesium potassium or sodium. Avoid prolonged contact with or storage in aluminum or its alloys. Avoid contact with amines.

**Hazardous Decomposition Products**

Decomposition products can include but are not limited to hydrogen chloride and traces of phosgene and chlorine.

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**SECTION 11: TOXICOLOGICAL INFORMATION**

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**Product Summary**

Product is mildly irritating to skin and eyes. Long term contact will defat the skin and may cause drying and flaking. Aerosol droplets and vapor may cause eye irritation.

**Acute Toxicity:**

- Dermal:** LD50 >20,000 mg/kg rabbit
- Inhalation:** LD50 8,450 ppm 4 hr mouse
- Oral:** LD50 4,920 mg/kg rat

**Skin Corrosion/Irritation**

Brief contact may cause moderate skin irritation with local redness. May cause drying and flaking of the skin. May cause more severe response on skin covered by clothing or gloves. Prolonged or repeated exposure may cause defatting of the skin leading to drying or flaking of skin.

**Serious Eye Damage/Irritation**

May cause moderate eye irritation. Vapor may cause eye irritation experienced as mild discomfort and redness.

**Sensitization - Respiratory or Skin**

Has demonstrated the potential for contact allergy in mice. Has caused allergic skin reactions when tested in guinea pigs.

**Specific Target Organ Effects - Single Exposure**

No data available

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

In animals, effects have been reported on the following organs: Kidney, liver, central nervous system, peripheral nervous system. Alcohol consumed before or after exposure may increase adverse effects. Trichloroethylene is reported to have caused hearing loss in lab animals upon repeated exposure to 2500 ppm or higher (orders of magnitude greater than current OELs). Relevance of this data to humans is unknown.

**Chronic Toxicity**

Tumors were observed in mice given large doses of trichloroethylene. However, mechanism for this tumor formation implies that nontoxic doses of trichloroethylene should pose little or no carcinogenic hazard. A very low incidence of tumors has been observed in male rats at high doses. Reduced survival rate rendered these studies inadequate. Limited epidemiology data have shown a weak association between trichloroethylene exposure and renal cancer.

**Genetic Toxicity**

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were predominantly negative. Trichloroethylene lacks genetic toxicity in most tests.

**Carcinogenicity**

Trichloroethylene is classified by IARC as Group 1: carcinogenic to humans; by NTP as reasonably anticipated to be a human carcinogen; by ACGIH as Group A2: suspected human carcinogen.

**Reproductive/Developmental Toxicity**

Did not interfere with reproduction. Male reproductive toxicity effects were observed in lab animals in the presence



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**INHIBISOL® OS**

Page: 6 of 8  
Date Prepared: March 15, 2015  
MSDS No.: 4780

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of systemic toxicity at high does levels. Did not cause birth defects in lab animals. Male reproductive toxicity effects were observed in lab animals in the presence of systemic toxicity at high dose levels.

**Aspiration Hazard**  
No data available

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**SECTION 12: ECOLOGICAL INFORMATION**

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**Product Summary**

Product is harmful to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/l in the most sensitive species tested). (Acute aquatic toxicity category 3 by European Union classification).

**Ecotoxicity**

Fathead minnow, 96 hr, LC50 67.3 mg/l  
American flagfish, flow-through test, 96 hr, LC50 28.3 mg/l  
Dab, flow-through test, 96 hr, LC50 16 mg/l  
Water flea, static test, 48 hr, immobilization, EC50 20.8 mg/l  
Water flea, 48 hr, EC50 210 mg/l  
Saltwater mysid *Mysidopsis bahia*, static test, 96 hr, LC50 14 mg/l  
Green algae, static test, growth rate inhibition, 72 hr, EC50 36.5 mg/l  
Activated sludge test (OECD 209), respiration inhibition, 3 hr, EC50 260 mg/l

**Persistence and Degradability**

14 day degradability of 2.4% (OECD 301C). 28 day degradability of 19% (method not stated). Product is not readily biodegradable. Product not considered to be persistent. Chemical oxygen demand 0.19 mg/mg. Theoretical oxygen demand 0.55 mg/mg

**Bioaccumulative Potential**

Log  $P_{ow}$  is 2.53 (measured) and bioconcentration factor is 17-90 (fish, measured). Biocentration potential is low.

**Mobility in soil**

Potential for mobility in soil is high ( $K_{oc}$  between 50 and 150). Partition coefficient, soil organic carbon/water ( $K_{oc}$ ) estimated to be 41-150. Henry's law constant (H) is 1.03E-02 atm\*m<sup>3</sup>/mole (measured).

**Other Adverse Effects**

None known

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**SECTION 13: DISPOSAL CONSIDERATIONS**

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Product is nonhazardous 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.

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**SECTION 14: TRANSPORT INFORMATION**

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**ID No.:** UN1710  
**Proper Shipping Name:** TRICHLOROETHYLENE  
**Hazard Class:** 6.1  
**Packing Group:** III  
**Label:** TOXIC  
**Marine Pollutant:** No



**INHIBISOL® OS**

Page: 7 of 8  
 Date Prepared: March 15, 2015  
 MSDS No.: 4780

**RQ:** 100 lb  
**Special Precautions:** None

**SECTION 15: REGULATORY INFORMATION**

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

**RCRA HAZARD CLASS**  
 U228

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

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

Component	CAS / 313 Code	Section 302 (EHS) TPQ	Section 304 EHS RQ	CERCLA RQ (1)	Section 313	CAA 112(r) TQ	CWA / OPA
Trichloroethylene	79-01-6			100	313	(2)	(3)
(1) Releases exceeding the RQ just be reported to the National Response Center, 800-424-8802 and may be subject to state and local reporting. (2) Listed as a hazardous air contaminant. (3) Listed as a hazardous substance and a priority and toxic pollutant							

**NEW JERSEY RIGHT-TO-KNOW INFORMATION**  
 This product contains trichloroethylene (CAS# 79-01-6)

**CALIFORNIA PROPOSITION 65 INFORMATION**  
 This product contains a chemical recognized by the state of California to cause cancer: trichloroethylene (CAS# 79-01-6).

**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? 1465 g/l  
 What is the vapor pressure of VOC's? 58 mm Hg @ 20°C

**SECTION 16: OTHER INFORMATION**

**REVISION SUMMARY**  
 New GHS format

**SUPERSEDES ISSUE DATE**  
 February 26, 2004

**HAZARD RATING SYSTEMS:**

	HMIS	NFPA
HEALTH	2	2
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

THE INFORMATION PRESENTED HEREIN HAS BEEN COMPILED FROM SOURCES CONSIDERED TO BE DEPENDABLE AND ACCURATE TO THE BEST OF PENETONE'S KNOWLEDGE. THE INFORMATION RELATES TO THIS SPECIFIC MATERIAL. IT MAY NOT BE VALID FOR THIS MATERIAL IF USED IN COMBINATION



## SAFETY DATA SHEET

Penetone® Corporation, 700 Gotham Parkway, Carlstadt, NJ 07072

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**INHIBISOL® OS**

Page: 8 of 8

Date Prepared: March 15, 2015

MSDS No.: 4780

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