OXSOL®

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

ISSUE DATE : 06-16-05

PRODUCT NAME : OXSOL®100

Manufacturer's Name and Address :	MANA 171 Madison Avenue New York, NY 10016	(212) 896-4935

24 HOUR EMERGENCY TELEPHONE : 1-800-535-5053

TO REQUEST AN MSDS : 1-800-699-8606

CUSTOMER SERVICE : (212) 896-4935

PRODUCT USE : Solvent

CHEMICAL NAME : Benzene,1-Chloro-4 (Trifluoromethyl)

CHEMICAL FORMULA : $C_7H_4ClF_3$

SYNONYMS/COMMON NAMES : PCBTF
Parachlorobenzotrifluoride

2. COMPOSITION/INFORMATION ON INGREDIENTS

CAS NUMBER / NAME
98-56-6 Benzene, 1-chloro-4-(trifluoromethyl)-

EXPOSURE LIMITS	PERCENTAGE	
PEL:Not Established	VOL	ND
TLV:Not Established	WT	98.50-100
CEL:25 ppm 8hr TWA		

COMMON NAMES:
p-chlorobenzotrifluoride
4-chlorobenzotrifluoride

Listed On(List Legend Below):
00 19 22 23 51

LIST LEGEND

00 TSCA Inventory	19 PA Requirement- 3% or greater
22 Canadian DSL	23 NJ Requirement- 1% or greater
51 EINECS	

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Combustible liquid, may cause irritation by all routes of exposure. May produce symptoms of central nervous system depression including headache, dizziness, nausea, loss of balance and drowsiness.

Clear colorless liquid with naphthalenic odor.

POTENTIAL HEALTH EFFECTS

ROUTES OF ENTRY:
Eyes, Ingestion, Inhalation, Skin.

TARGET ORGANS:
Central Nervous System, Kidneys, Liver.

IRRITANCY:
Eyes, Respiratory Tract, Skin.

SENSITIZING CAPABILITY:
None known.

REPRODUCTIVE EFFECTS:
None known.

CANCER INFORMATION:
Not known to be carcinogenic.

SHORT-TERM EXPOSURE (ACUTE)

INHALATION:
May produce symptoms of central nervous system depression including headache, dizziness, nausea, loss of balance and drowsiness.

EYES:
May be irritating.

SKIN:
May be irritating.

INGESTION:
Ingestion may cause damage to the lining of the gastrointestinal tract.

See Inhalation and Repeated Exposure.

REPEATED EXPOSURE (CHRONIC)
Prolonged or repeated breathing or swallowing of large amounts may cause liver and kidney damage based on animal studies.

See Inhalation and Ingestion.

SYNERGISTIC MATERIALS:
None known.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:
None known.

4. FIRST AID MEASURES

EYES:

IMMEDIATELY flush eyes with a directed stream of water for at least 15 minutes, forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissue. IF IRRITATION PERSISTS GET MEDICAL ATTENTION.

SKIN:

Wash thoroughly with soap and water. Wash clothing before reuse. IF IRRITATION OCCURS, GET MEDICAL ATTENTION.

INHALATION:

Remove to fresh air. If breathing is difficult, have trained person administer oxygen. If respiration stops, have a trained person administer artificial respiration. GET MEDICAL ATTENTION IMMEDIATELY.

INGESTION:

DO NOT INDUCE VOMITING. This material is not soluble. DO NOT GIVE FLUIDS. If spontaneous vomiting is inevitable, PREVENT ASPIRATION by keeping the victims head below the knees. GET IMMEDIATE MEDICAL ATTENTION. A qualified physician can perform gastric lavage only when the airway (trachea) has been secured to prevent aspiration.

NOTES TO PHYSICIAN:

Administration of adsorbents such as activated charcoal may be of value. Gastric lavage may be effective when performed by a physician within 4 hours of ingestion.

5. FIRE FIGHTING MEASURES

Flash Point: 42.8℃ (109℉)
Method: TAG CC
Autoignition Temperature: >500℃
FLAMMABLE LIMITS IN AIR, BY % VOLUME
Upper: 10.5
Lower: 0.9

EXTINGUISHING MEDIA:

Foam, dry chemical, carbon dioxide, water fog or spray.

FIRE FIGHTING PROCEDURES:

Evacuate all unnecessary personnel. Shut down motors, pumps, electrical service and eliminate all sources of ignition. Use water spray to keep fire exposed containers cool to avoid pressure buildup. Wear NIOSH/MSHA approved positive pressure self-contained breathing apparatus and full protective clothing.

FIRE AND EXPLOSION HAZARD:

Combustible liquid.

Material does not sustain combustion.

Over-heated drums may rupture. Heavy vapors can travel to source of ignition and flash back.

SENSITIVITY TO MECHANICAL IMPACT:

Not applicable.

SENSITIVITY TO STATIC DISCHARGE:

Electrostatic charge may build up during handling. Grounding of equipment is recommended.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:

Evacuate unnecessary personnel and eliminate all sources of ignition.

Follow protective measures provided under Personal Protection in Section 8.

ENVIRONMENTAL PRECAUTIONS:

Contain liquids and prevent discharges to streams or sewers, control or stop the loss of volatile materials to the atmosphere. Large leaks may require environmental consideration and possible evacuation. Do not apply water to the leak. Spills or releases should be reported, if required, to the appropriate local, state and federal agencies.

METHODS FOR CLEANING UP:

If a significant spill occurs, evacuate area. If exposure conditions warrant, wear a NIOSH/MSHA approved positive pressure self-contained breathing apparatus and full protective clothing. Shut off electrical service and protect from ignition. Contain spill or release with a dike to prevent flow into sewers or streams. Pump into container for disposal or reclamation. Soak up small spills with absorbent material.

7. HANDLING AND STORAGE

HANDLING:

Avoid breathing vapor, use with adequate ventilation. Wear NIOSH/MSHA approved respiratory protection if there is potential for exposure above the exposure limits.

Do not get in eyes, on skin or clothing.

Wear personal protective equipment as described in Exposure Controls/Personal Protection (Section 8) of the MSDS.

Wash thoroughly with soap and water after handling.

Keep away from heat, sparks, pilot lights, welding operations and open flame.

Do not eat, drink or smoke in areas where this material is used.

Ground all equipment.

Never enter a pit or tank without following safety procedures-never alone, always with a lifeline and positive pressure supplied air.

Vapors are heavier than air and will tend to collect in low areas. Avoid use in confined spaces. Areas of poor ventilation could containconcentrations high enough to cause unconsciousness and death. Use approved supplied air respirator following manufacturer's recommendations where vapors may be generated.

Do not reuse containers.

SPECIAL MIXING AND HANDLING INSTRUCTIONS:

Do not allow contact with materials as noted in Section 10.

STORAGE:

Keep container tightly closed and properly labeled.

Store in a cool, ventilated area away from incompatible materials (see Section 10).

Dike storage containers to contain 110% of tank volume.

Vent indoor tanks to an outside location so escaping vapors will not contaminate any work areas.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

General room ventilation plus local exhaust at points of emission to maintain levels of airborne contaminants below exposure limits.

PERSONAL PROTECTION

RESPIRATORY:

For emergencies and unknown concentrations, use NIOSH/MSHA approved positive pressure self-contained breathing apparatus. Utilize respiratory protective equipment in accordance with 29CFR 1910.134 (Respiratory Protection).

EYE/FACE:

Wear chemical safety goggles plus full face shield to protect against splashing when appropriate (ANSI Z87.1).

SKIN:

Wear chemical resistant gloves such as North Silver Shield® or Viton®. For limited use, PVC or nitrile gloves may be worn. Silver Shield is a registered trademark of Siebe North, Inc. Viton is a registered trademark of E. I. DuPont deNemours and Company, Inc.

Wear plastic or rubber apron for splash protection.

OTHER:

Emergency shower and eyewash facility should be in close proximity (ANSI Z358.1).

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Clear colorless liquid with naphthalenic odor.

Odor Threshold: <1.0 ppm

Specific Gravity (Water=1): 1.34

Vapor Pressure: 5.3 mm @ 20℃

Vapor Density (Air=1): 6.2

Density: 11.2 lbs/gal

Evaporation Rate: (n-butyl acetate=1): 0.9

% Volatiles by Wt: 100%

Boiling Point: 139℃ (282℉)

Freezing Point: -36℃ (-33℉)

Melting Point: -36℃ (-33℉)

Solubility in Water (% by wt.): 29 ppm @ 23℃

pH: Not applicable

Octanol/Water Partition Coefficient: log Kow = 3.70

Thermal Decomposition Temperature: Not available

Other: Limited Oxygen Index (LOI) = 26.2

VOC (g/l. by wt.): Negligible

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY:

__X__ STABLE _____ UNSTABLE

REACTS WITH:

_____ AIR __X__ OXIDIZERS _____ METALS
_____ WATER _____ ACIDS _____ OTHER
_____ HEAT _____ ALKALIS _____ NONE

HAZARDOUS POLYMERIZATION:

_____ OCCURS __X__ WILL NOT OCCUR

COMMENTS:

Avoid contact with oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS:

Chlorine containing gases can be produced.

Fluorine containing gases can be produced.

11. TOXICOLOGICAL INFORMATION

98-56-6 Benzene, 1-chloro-4-(trifluoromethyl)-

ACUTE ORAL LD50 :	(rat)	>6.8 g/kg
ACUTE DERMAL LD50 :	(rabbit)	>2.7 g/kg
ACUTE INHALATION LC50 :	(rat)	4479 ppm
PRIMARY SKIN IRRITATION :	(rabbit)	non-irritating
PRIMARY EYE IRRITATION :	(rabbit)	non-irritating

A 28-day range-finding inhalation study was conducted in male and female Sprague-Dawley rats exposed to 0, 100, 250, 500, or 1000 ppm for 6 hr/day, 5 days/week. Clinical signs included increased activity at 250 ppm and above. Liver and kidney weights were increased. Microscopic changes in male kidneys stained positive for alpha-2-U globulin and the effects were considered not relevant to humans. Liver cell hypertrophy was seen at all exposures in males. Liver changes were consistent with clinical chemistry and PCBTF-blood level analysis and are believed to be an adaptive response, due to increased liver metabolism.

Gavage studies in laboratory rodents for treatment periods of 14, 28, and 90 days have demonstrated significant liver and kidney toxicity at dose levels of 400 - 1000 mg/kg/day. Evidence of target organ toxicity included significant increases in relative liver and kidney weights, clinical chemistry values and histopathological findings. Renal toxicity which occurred only in male rats, was apparently due to "hyaline droplet" nephropathy and is therefore, highly unlikely to develop in man. The NOAEL's for all these studies range from 10 to 100 mg/kg/day.

CNS effects were observed in rats exposed to PCBTF at or above 2822 ppm for 4 hours.

A 90 day(13 week) rat inhalation toxicity and neurobehavioral study was conducted using exposures of 6 hrs/day, 5 days/week at concentrations of 0, 10, 50 and 250 ppm. There were no PCBTF-related macroscopic observations. Microscopically, PCBTF-related centrilobular hypertrophy was present only in the livers of males and females at the high dose (250 ppm) after 13-weeks of exposure. No centrilobular hypertrophy was observed at any level among recovery animals. There were no PCBTF-related effects on the nervous system as measured by a functional observation battery, muscular activity measurements and neuropathology. A NOEL of 50 ppm was established in this study for liver hepatocyte hypertrophy in male and female rats. If the hepatocyte hypertrophy observed is considered to be an adaptive response to PCBTF, the NOAEL for this study is 250ppm.

12. ECOLOGICAL INFORMATION

98-56-6 Benzene, 1-chloro-4-(trifluoromethyl)-

AQUATIC ECOTOX DATA

Fish:

LC50 (96 hr.)	(Rainbow trout)	13.5	mg/L
LC50 (96 hr.)	(Bluegill sunfish)	12.0	mg/L
MATC (31 day)	(Fathead minnow)	>0.54 <1.4	mg/L*

*Triethylene glycol used as solvent carrier

BCF (48 hr.) (Bluegill sunfish) 121.8 & 202.0

Invertebrates:
LC50 (48 hr.) (Water flea) 12.4 mg/L
MATC (21 day) (Water flea) >0.03 < 0.05 mg/L*
*Acetone used as solvent carrier

Plants:
IC50 (72 hr.) (Green & Blue-green algae) 500 mg/L

TERRESTRIAL ECOTOX DATA
No data available

ENVIRONMENTAL FATE DATA
Biotic:
Biodegradation: inconclusive due to volatility

Abiotic:
Atmospheric lifetime: estimated to be 65.9 days for OH radical reaction

Log Kow	3.7
Koc	420 - 530
Water Sol. @ 23 C	29.1

p-Chlorobenzotrifluoride (PCBTF) will preferentially partition to the atmosphere, due to its high volatility. It has been estimated that 99.93% of a 100 Kg spill would end up in the atmosphere, while only 0.06% would partition to water (M. Garlanda, 1990). The aqueous solubility of PCBTF (29.1 mg/L) would also tend to limit its potential impact to exposed aquatic systems. PCBTF has exhibited significant toxicity to aquatic species under laboratory conditions, but is unlikely to exhibit a similar degree of acute toxicity under environmental conditions due to the aforementioned solubility and volatility issues. The moderate level of bioaccumulation measured in laboratory tests will also be subject to environmental mitigation due to PCBTF's physical/chemical properties. PCBTF should rapidly volatilize from dry and moist soils. Volatility, and relative environmental partitioning characteristics, make it unlikely that PCBTF represents a significant threat to aquatic or terrestrial environments.

13. DISPOSAL CONSIDERATIONS

Shipments of waste materials may be subject to manifesting requirements per applicable regulations. Appropriate disposal will depend on the nature of each waste material and should be done by a competent and properly permitted contractor.

Recovered nonusable material is a RCRA Hazardous Waste. Treatment, storage, transportation and disposal must be in accordance with EPA and State regulations under the authority of the Resource Conservation and Recovery Act (RCRA) 40 CFR parts 260-271.

14. TRANSPORT INFORMATION

DOT INFORMATION: Not Regulated

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

OSHA Standard 29 CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, material safety data sheets, training and access to written records. We request that you, and it is your legal duty to, make all information in this Material Safety Data Sheet available to your employees.

To aid our customers in complying with regulatory requirements, SARA Title III Hazard Categories for this product are indicated below. If the word "YES" appears next to any category, this product may be reportable by you under the requirements of 40.CFR.370. Please consult those regulations for details.

Parachlorobenzotrifluoride was designated by the Interagency Testing Committee for action by the EPA under Section 4(e) of the Toxic Substance Control Act. As a result of data submitted under a negotiated testing program, the EPA subsequently concluded that the information provided adequately characterized

the Health, Environment and Chemical fate effects of parachlorobenzotrifluoride and issued a decision not to require further testing.

TSCA:

All components of this product that are required to be on the TSCA inventory are listed on the inventory.

SARA/TITLE III HAZARD CATEGORIES:
Immediate(Acute) Health: _NO__ Reactive Hazard _NO__
Delayed(Chronic) Health: _YES_ Sudden Release of Pressure _NO__
Fire Hazard: _YES_

HMIS HAZARD RATINGS:
HEALTH HAZARD: _1*__ FIRE HAZARD: __2__ REACTIVITY: __1__

STATE REGULATIONS:

See Section 2. COMPOSITION/INFORMATION ON INGREDIENTS list legend for applicable state regulation.

INTERNATIONAL REGULATIONS:

Consult the regulations of the importing country.

CANADA:

WHMIS Hazard Class: B3

16. OTHER INFORMATION

For additional non-emergency health, safety or environmental information telephone 800-699-8606 or write to:

IsleChem, LLC
2801 Long Road
Grand Island, NY 14072

MSDS LEGEND:
ACGIH = American Conference of Governmental Industrial Hygienists
CAS = Chemical Abstracts Service Registry Number
CEILING = Ceiling Limit (15 Minutes)
CEL = Corporate Exposure Limit
OSHA = Occupational Safety and Health Administration
PEL = Permissible Exposure Limit (OSHA)
STEL = Short Term Exposure Limit (15 Minutes)
TDG = Transportation of Dangerous Goods (Canada)
TLV = Threshold Limit Value (ACGIH)
TWA = Time Weighted Average (8 Hours)
WHMIS = Worker Hazardous Materials Information System (Canada)

* = See Section 3 Hazards Identification - Repeated Exposure(Chronic) Information

IMPORTANT: The information presented herein, while not guaranteed, was prepared by competent technical personnel and is true and accurate to the best of our knowledge. NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR PURPOSE, OR OF ANY OTHER KIND, EXPRESS OR IMPLIED, IS MADE REGARDING PERFORMANCE, STABILITY OR OTHERWISE. This information is not intended to be all-inclusive as to the manner and conditions of use, handling and storage. Other factors may involve other or additional safety or performance considerations. While our technical personnel will be happy to respond to questions regarding safe handling and use procedures, safe handling and use remains the responsibility of the customer. No suggestions for use are intended as, and nothing herein shall be construed as a recommendation to infringe any existing patents or violate any federal, state or local laws, rules, regulations or ordinances.

A Corporate Exposure Limit (CEL) for parachlorobenzotrifluoride of 25 ppm (8hr TWA)has been established.

17. WARNING LABEL INFORMATION

SIGNAL WORD:

WARNING

HAZARD WARNINGS:

COMBUSTIBLE LIQUID.

MAY CAUSE IRRITATION BY ALL ROUTES OF EXPOSURE.

MAY PRODUCE SYMPTOMS OF CENTRAL NERVOUS SYSTEM DEPRESSION INCLUDING HEADACHE, DIZZINESS, NAUSEA, LOSS OF BALANCE AND DROWSINESS.

PRECAUTIONS:

Keep away from heat, sparks, pilot lights, welding operations and open flame.

Avoid breathing dust, vapors or mist.

Avoid contact with eyes, skin and clothing.

Do not swallow.

Do not eat, drink or smoke in areas where this material is used.

Wash thoroughly with soap and water after handling.

Do not reuse container. Product residues may remain. All labeled precautions MUST be observed.

Ground all equipment before use.

Never enter a pit or tank without following safety procedures - never alone, always with a lifeline, and always with a positive pressure supply of fresh air. Avoid use in confined spaces.

Before using, read Material Safety Data Sheet (MSDS) for this material.

FIRST AID

EYES:

IMMEDIATELY flush eyes with a directed stream of water for at least 15 minutes, forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissue. IF IRRITATION PERSISTS GET MEDICAL ATTENTION.

SKIN:

Wash thoroughly with soap and water. Wash clothing before reuse. IFIRRITATION OCCURS, GET MEDICAL ATTENTION.

INHALATION:

Remove to fresh air. If breathing is difficult, have trained person administer oxygen. If respiration stops, have a trained person administer artificial respiration. GET MEDICAL ATTENTION IMMEDIATELY.

INGESTION:

DO NOT INDUCE VOMITING. This material is not soluble. DO NOT GIVE FLUIDS. If spontaneous vomiting is inevitable, PREVENT ASPIRATION by keeping the victims head below the knees. GET IMMEDIATE MEDICAL ATTENTION. A qualified physician can perform gastric lavage only when the airway (trachea) has been secured to prevent aspiration.

IN CASE OF SPILL OR LEAK:

Evacuate unnecessary personnel and eliminate all sources of ignition.

Wear full protective equipment and clothing.

Contain spill and pump into marked container for reclamation or disposal.

FIRE:

Foam, dry chemical, carbon dioxide, water fog or spray.

HANDLING AND STORAGE:

Wear chemical safety goggles plus full face shield to protect against splashing when appropriate (ANSI Z87.1).

Wear chemical resistant gloves such as North Silver Shield® or Viton®. For limited use, PVC or nitrile gloves may be worn. Silver Shield is a registered trademark of Siebe North, Inc. Viton is a registered trademark of E. I. DuPont deNemours and Company, Inc.

Store in a cool, dry, well ventilated area away from incompatible materials.

Keep container tightly closed and properly labeled.

Dike storage tanks separately to contain 110% of tank volume.

DISPOSAL:

Always package, store, transport and dispose of all waste and contaminated equipment in accordance with all applicable federal, state, and local health and environmental regulations.

INFORMATION REQUIRED BY FEDERAL, STATE OR LOCAL REGULATIONS:

This Product Contains:

CAS#	NAME
98-56-6	Benzene, 1-chloro-4-(trifluoromethyl)-

VOC (g/l. by wt.): Negligible

Contains no photochemically reactive material in accordance with Rule 443 of the South Coast Air Quality Management District.

HMIS RATING: HEALTH _1*__ FLAMMABILITY __2__ REACTIVITY __1__

For Industrial Use Only

---------- ® represents registered trademark ----------