# SAFETY DATA SHEET



## 1. Identification

**Product identifier** 2.3'.5.5'-Tetrachlorobiphenyl Solution

Other means of identification

BZ-72J1

For Laboratory Use Only Recommended use

**Recommended restrictions** None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name Chem Service, Inc. 660 Tower Lane **Address** 

West Chester, PA 19380

**United States** 

Toll Free 800-452-9994 **Telephone** Direct

610-692-3026

Website www.chemservice.com E-mail info@chemservice.com

Chemtrec US 800-424-9300 **Emergency phone number** 

Chemtrec outside US +1 703-527-3887

# 2. Hazard(s) identification

Physical hazards Flammable liquids Category 2 Health hazards Acute toxicity, oral Category 2 Skin corrosion/irritation Category 2 Serious eye damage/eye irritation Category 2A

Reproductive toxicity (fertility) Category 2

Specific target organ toxicity, single exposure Category 3 narcotic effects

Specific target organ toxicity, repeated

exposure

Category 1

Hazardous to the aquatic environment, acute **Environmental hazards** 

hazard

Hazardous to the aquatic environment,

long-term hazard

Category 2 Category 2

**OSHA** defined hazards Not classified.

Label elements



Signal word Danger

**Hazard statement** Highly flammable liquid and vapor. Fatal if swallowed. Causes skin irritation. Causes serious eye

irritation. May cause drowsiness or dizziness. Suspected of damaging fertility. Causes damage to organs through prolonged or repeated exposure. Toxic to aquatic life. Toxic to aquatic life with

long lasting effects.

**Precautionary statement** Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only outdoors or in a well-ventilated area. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

#### Response

If swallowed: Immediately call a poison center/doctor. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If exposed or concerned: Get medical advice/attention. Call a poison center/doctor if you feel unwell. Specific treatment (see this label). Rinse mouth. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse. In case of fire: Use appropriate media to extinguish. Collect spillage.

**Storage** 

Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place.

Keep cool. Store locked up.

Disposal Hazard(s) not otherwise classified (HNOC)

Dispose of contents/container in accordance with local/regional/national/international regulations. Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

Supplemental information

0.99% of the mixture consists of component(s) of unknown acute oral toxicity. 0.99% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 0.99% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

# 3. Composition/information on ingredients

#### **Mixtures**

Chemical name	Common name and synonyms	CAS number	%
n-Hexane		110-54-3	90 - 100
2.3'.5.5'-Tetrachlorobiphenyl		41464-42-0	0.01

<sup>\*</sup>Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

## 4. First-aid measures

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON Inhalation CENTER or doctor/physician if you feel unwell.

Skin contact Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.

Immediately flush eves with plenty of water for at least 15 minutes. Remove contact lenses, if Eye contact

present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists. Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting without Ingestion

advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Most important symptoms/effects, acute and delayed

Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. May cause redness and pain. Prolonged exposure may cause chronic effects.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

**General information** 

Take off all contaminated clothing immediately. IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

# 5. Fire-fighting measures

Suitable extinguishing media

Water fog. Foam. Carbon dioxide (CO2). Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical

Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly grounded containers. Static electricity accumulation may be significantly increased by the presence of small quantities of water or other contaminants. Material will float and may ignite on surface of water. During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire-fighting equipment/instructions Specific methods

In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.

Use standard firefighting procedures and consider the hazards of other involved materials.

## 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Immediately evacuate personnel to safe areas. Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Use appropriate containment to avoid environmental contamination. Transfer by mechanical means such as vacuum truck to a salvage tank or other suitable container for recovery or safe disposal. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

# Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Keep combustibles (wood, paper, oil, etc.) away from spilled material. This material is classified as a water pollutant under the Clean Water Act and should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

### **Environmental precautions**

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground. Use appropriate containment to avoid environmental contamination.

# 7. Handling and storage

# Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Vapors may form explosive mixtures with air. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Minimize fire risks from flammable and combustible materials (including combustible dust and static accumulating liquids) or dangerous reactions with incompatible materials. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Do not breathe mist or vapor. Do not taste or swallow. Avoid contact with skin. Avoid contact with eyes. Avoid contact during pregnancy/while nursing. Avoid prolonged exposure. Avoid contact with clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Avoid release to the environment. Do not empty into drains.

For additional information on equipment bonding and grounding, refer to the Canadian Electrical Code in Canada, (CSA C22.1), or the American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising out of Static, Lightning, and Stray Currents" or National Fire Protection Association (NFPA) 77, "Recommended Practice on Static Electricity" or National Fire Protection Association (NFPA) 70, "National Electrical Code".

# Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Avoid spark promoters. Eliminate sources of ignition. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Store in original tightly closed container. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Refrigeration recommended. Store away from incompatible materials (see Section 10 of the SDS). Keep in an area equipped with sprinklers.

## 8. Exposure controls/personal protection

# Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)			
Components	Туре	Value	
n-Hexane (CAS 110-54-3)	PEL	1800 mg/m3 500 ppm	

116	<b>ACGIH</b>	Throc	hold	I imit	Values
ua.	ACGIR	111163	nioia		values

Components	Туре	Value	
n-Hexane (CAS 110-54-3)	TWA	50 ppm	
US. NIOSH: Pocket Guide to Chen Components	nical Hazards Type	Value	
2.3'.5.5'-Tetrachlorobipheny	TWA	0.001 mg/m3	
I (CAS 41464-42-0)	IVVA	0.001 mg/m3	
n-Hexane (CAS 110-54-3)	TWA	180 mg/m3	
		50 ppm	

# **Biological limit values**

**ACGIH Biological Exposure Indices** 

Components	Value	Determinant	Specimen	Sampling Time
n-Hexane (CAS 110-54-3)	0.4 mg/l	2,5-Hexanedio n, without hydrolysis	Urine	*

<sup>\* -</sup> For sampling details, please see the source document.

#### **Exposure guidelines**

US - California OELs: Skin designation

n-Hexane (CAS 110-54-3) Can be absorbed through the skin.

**US ACGIH Threshold Limit Values: Skin designation** 

n-Hexane (CAS 110-54-3)

Can be absorbed through the skin.

Appropriate engineering

controls

Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

## Individual protection measures, such as personal protective equipment

**Eye/face protection** Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear appropriate chemical resistant gloves.Other Wear appropriate chemical resistant clothing.

Respiratory protection If engineering controls do not maintain airborne concentrations below recommended exposure

limits (where applicable) or to an acceptable level (in countries where exposure limits have not

been established), an approved respirator must be worn.

**Thermal hazards** Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely

wash work clothing and protective equipment to remove contaminants.

# 9. Physical and chemical properties

**Appearance** 

Physical stateLiquid.FormLiquidColorNot available.

Odor Not available.
Odor threshold Not available.
pH Not available.

Melting point/freezing point -137.74 °F (-94.3 °C) estimated Initial boiling point and boiling 155.66 °F (68.7 °C) estimated

range

Flash point -7.0 °F (-21.7 °C) estimated

Evaporation rate Not available.
Flammability (solid, gas) Not available.
Upper/lower flammability or explosive limits

Flammability limit - lower

(%)

Not available.

Flammability limit - upper

Not available.

(%)

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure 202.64 hPa estimated

Vapor density Not available.

Relative density Not available.

Solubility(ies)

Solubility (water) Not available.

Partition coefficient Not available.

(n-octanol/water)

Auto-ignition temperature 437 °F (225 °C) estimated

**Decomposition temperature** Not available. **Viscosity** Not available.

Other information

**Density** 0.65 g/cm3 estimated **Flammability class** Flammable IB estimated

Specific gravity 0.65 estimated

# 10. Stability and reactivity

**Reactivity**The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous Hazardous polymerization does not occur.

reactions

Conditions to avoid Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the

flash point. Contact with incompatible materials.

**Incompatible materials** Strong oxidizing agents.

**Hazardous decomposition** 

products

No hazardous decomposition products are known.

# 11. Toxicological information

## Information on likely routes of exposure

**Ingestion** Fatal if swallowed.

**Inhalation** Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea.

Prolonged inhalation may be harmful. May cause damage to organs by inhalation.

**Skin contact** Causes skin irritation.

**Eye contact** Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. Symptoms of overexposure may be headache, dizziness, tiredness,

nausea and vomiting.

## Information on toxicological effects

Acute toxicity Fatal if swallowed. Narcotic effects. Expected to be a low hazard for usual industrial or

commercial handling by trained personnel.

Components	Species	Test Results		
n-Hexane (CAS 110-54-3)				
Acute				
Dermal				
LD50	Rabbit	> 2000 mg/kg		
		> 5 ml/kg		
Inhalation				
LC50	Mouse	48000 ppm, 4 Hours		
	Rat	> 5000 ppm, 24 Hours		
		> 31.86 mg/l		
		73860 ppm, 4 Hours		
Oral				
LD50	Rat	24 mg/kg		
		24 ml/kg		

Components **Species Test Results** 

Wistar rat

49 mg/kg

\* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation

Causes skin irritation.

Causes serious eye irritation.

Serious eye damage/eye

irritation

Respiratory or skin sensitization

Respiratory sensitization Not available.

Skin sensitization This product is not expected to cause skin sensitization.

No data available to indicate product or any components present at greater than 0.1% are Germ cell mutagenicity

mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

2.3'.5.5'-Tetrachlorobiphenyl (CAS 41464-42-0) 1 Carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens

2.3'.5.5'-Tetrachlorobiphenyl (CAS 41464-42-0) Reasonably Anticipated to be a Human Carcinogen.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity Suspected of damaging fertility.

Specific target organ toxicity -

single exposure

Narcotic effects.

Specific target organ toxicity -

repeated exposure

Causes damage to organs through prolonged or repeated exposure.

**Aspiration hazard** Not available.

**Chronic effects** Prolonged inhalation may be harmful. Causes damage to organs through prolonged or repeated

exposure.

# 12. Ecological information

Toxic to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected. **Ecotoxicity** 

**Test Results** Components **Species** 

n-Hexane (CAS 110-54-3)

Aquatic

LC50 Fish Fathead minnow (Pimephales promelas) 2.101 - 2.981 mg/l, 96 hours

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available. Partition coefficient n-octanol / water (log Kow)

n-Hexane 3.9

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation

potential, endocrine disruption, global warming potential) are expected from this component.

# 13. Disposal considerations

**Disposal instructions** Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material

> and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international

regulations.

Local disposal regulations

Dispose in accordance with all applicable regulations.

Hazardous waste code

The waste code should be assigned in discussion between the user, the producer and the waste

disposal company.

Waste from residues / unused

products

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see:

Disposal instructions).

Empty containers should be taken to an approved waste handling site for recycling or disposal. Contaminated packaging

Since emptied containers may retain product residue, follow label warnings even after container is

emptied.

SDS US

<sup>\*</sup> Estimates for product may be based on additional component data not shown.

# 14. Transport information

DOT

UN number UN1993

UN proper shipping name Flammable liquids, n.o.s., MARINE POLLUTANT

Transport hazard class(es)

Class 3
Subsidiary risk Label(s) 3
Packing group ||
Environmental hazards

Marine pollutant Yes

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Special provisions IB2, T7, TP1, TP8, TP28

Packaging exceptions150Packaging non bulk202Packaging bulk242

**IATA** 

UN number UN1993

UN proper shipping name Flammable liquid, n.o.s.

Transport hazard class(es)

Class 3
Subsidiary risk Packing group II
Environmental hazards No.
ERG Code 3H

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Other information

Passenger and cargo

aircraft

Cargo aircraft only Allowed.

**IMDG** 

UN number UN1993

UN proper shipping name FLAMMABLE LIQUID, N.O.S., MARINE POLLUTANT

Not available.

Allowed.

Transport hazard class(es)

Class 3
Subsidiary risk Packing group ||
Environmental hazards

Marine pollutant Yes
EmS F-E. S-E

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and

the IBC Code

DOT



## IATA; IMDG



#### Marine pollutant



# 15. Regulatory information

**US federal regulations** 

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication

Standard, 29 CFR 1910.1200.

All components are on the U.S. EPA TSCA Inventory List.

Listed.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

2.3'.5.5'-Tetrachlorobiphenyl (CAS 41464-42-0)

0.00005 % Annual Export Notification required.

CERCLA Hazardous Substance List (40 CFR 302.4)

n-Hexane (CAS 110-54-3)

SARA 304 Emergency release notification

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes

Delayed Hazard - Yes Fire Hazard - Yes Pressure Hazard - No Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous No

chemical

SARA 313 (TRI reporting)

 Chemical name
 CAS number
 % by wt.

 n-Hexane
 110-54-3
 90 - 100

## Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

n-Hexane (CAS 110-54-3)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act Not regulated.

(SDWA)

### **US state regulations**

**US. Massachusetts RTK - Substance List** 

2.3'.5.5'-Tetrachlorobiphenyl (CAS 41464-42-0)

n-Hexane (CAS 110-54-3)

US. New Jersey Worker and Community Right-to-Know Act

2.3'.5.5'-Tetrachlorobiphenyl (CAS 41464-42-0) 500 LBS n-Hexane (CAS 110-54-3) 500 LBS

### US. Pennsylvania RTK - Hazardous Substances

2.3'.5.5'-Tetrachlorobiphenyl (CAS 41464-42-0)

n-Hexane (CAS 110-54-3)

#### **US. Rhode Island RTK**

n-Hexane (CAS 110-54-3)

## **US. California Proposition 65**

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

## US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

2.3'.5.5'-Tetrachlorobiphenyl (CAS 41464-42-0) Listed: October 1, 1989

# US - California Proposition 65 - CRT: Listed date/Developmental toxin

Inventory name

2.3'.5.5'-Tetrachlorobiphenyl (CAS 41464-42-0) Listed: January 1, 1991

#### International Inventories

Country(s) or region

Country(s) or region	inventory name	On inventory (yes/no)
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances	Yes

(PICCS)

United States & Puerto Rico Toxic Substances Control Act (TSCA) Inventory

Yes

On inventory (vec/ne)\*

# 16. Other information, including date of preparation or last revision

**Issue date** 04-11-2014

Version # 01

NFPA ratings Health: 2

Flammability: 3 Instability: 0

# Disclaimer

The above information is believed to be correct on the date it was last revised and must not be considered all inclusive. The information has been obtained only by a search of available literature and is only a guide for handling the chemicals. OSHA regulations require that if other hazards become evident, an upgraded SDS must be made available to the employee within three months. RESPONSIBILITY for updates lies with the employer and not with CHEM SERVICE, Inc.

Persons not specifically and properly trained should not handle this chemical or its container. This product is furnished FOR LABORATORY USE ONLY! Our products may NOT BE USED as drugs, cosmetics, agricultural or pesticide products, food additives or as household chemicals.

This Safety Data Sheet (SDS) is intended only for use with Chem Service, Inc. products and should not be relied on for use with materials from any other supplier even if the chemical name(s) on the product are identical! Whenever using an SDS for a solution or mixture the user should refer to the SDS for every component of the solution or mixture. Chem Service warrants that this SDS is based upon the most current information available to Chem Service at the time it was last revised. THIS WARRANTY IS EXCLUSIVE, AND CHEM SERVICE, INC. MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE. This SDS is provided gratis and CHEM SERVICE, INC. SHALL NOT BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR CONTINGENT DAMAGES.

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This product is furnished FOR LABORATORY USE ONLY.

<sup>\*</sup>A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).