

SAFETY DATA SHEET

CHEM SERVICE Inc.

1. Identification

Product identifier 3,3',5,5'-Tetrachlorobiphenyl

Other means of identification

Item BZ-80

Recommended use For Laboratory Use Only

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name Chem Service, Inc.

Address 660 Tower Lane
West Chester, PA 19380
United States

Telephone Toll Free 800-452-9994
Direct 610-692-3026

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

Emergency phone number Chemtrec US 800-424-9300
Chemtrec outside US +1 703-527-3887

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Acute toxicity, oral Category 4
Acute toxicity, dermal Category 3
Carcinogenicity Category 1A
Specific target organ toxicity, repeated exposure Category 2

Environmental hazards Hazardous to the aquatic environment, acute hazard Category 1



Signal word Danger

Hazard statement

Harmful if swallowed. Toxic in contact with skin. May cause cancer. May cause damage to organs through prolonged or repeated exposure. Very toxic to aquatic life. Very 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. Do not breathe dust/fume/gas/mist/vapors/spray. 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: Call a poison center/doctor if you feel unwell. If on skin: Wash with plenty of water. If exposed or concerned: Get medical advice/attention. Call a poison center/doctor if you feel unwell. Rinse mouth. Take off immediately all contaminated clothing and wash it before reuse. Collect spillage.

Storage

Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Substances

Chemical name	Common name and synonyms	CAS number	%
3,3',5,5'-Tetrachlorobiphenyl		33284-52-5	100

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Take off immediately all contaminated clothing. Wash off with soap and water. Get medical advice/attention if you feel unwell. Get medical attention if irritation develops and persists. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.
Most important symptoms/effects, acute and delayed	Prolonged exposure may cause chronic effects.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	Take off immediately all contaminated clothing. IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	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	Use water spray to cool unopened containers.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. 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	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. Absorb in vermiculite, dry sand or earth and place into containers. 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.
	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases.

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. Provide adequate ventilation. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Wash contaminated clothing before reuse. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection**Occupational exposure limits****US. NIOSH: Pocket Guide to Chemical Hazards**

Material	Type	Value
3,3',5,5'-Tetrachlorobiphenyl I (CAS 33284-52-5)	TWA	0.001 mg/m ³
Biological limit values		No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls		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.
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. Suitable gloves can be recommended by the glove supplier.	
Other	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.	
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment.	
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.	
General hygiene considerations	Keep away from food and drink. 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 state	Solid.
Form	Crystalline Solid
Color	White
Odor	Not available.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	323.6 °F (162 °C)
Initial boiling point and boiling range	721.22 °F (382.9 °C) estimated
Flash point	Not available.
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	0.000001 kPa at 25 °C
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	1.44 g/cm3 estimated
Explosive properties	Not explosive.
Molecular formula	C12H6Cl4
Molecular weight	291.99
Oxidizing properties	Not oxidizing.
Specific gravity	1.44

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 reactions	Hazardous polymerization does not occur.
Conditions to avoid	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

Inhalation	Prolonged inhalation may be harmful.
Skin contact	Toxic in contact with skin.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Harmful if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics	Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity	Toxic in contact with skin. Harmful if swallowed.
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization

Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	May cause cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

3,3',5,5'-Tetrachlorobiphenyl (CAS 33284-52-5)

1 Carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens

3,3',5,5'-Tetrachlorobiphenyl (CAS 33284-52-5)

Reasonably Anticipated to be a Human Carcinogen.

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

Not listed.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	May cause damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity	Very toxic to aquatic life with long lasting effects.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available.
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. 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).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

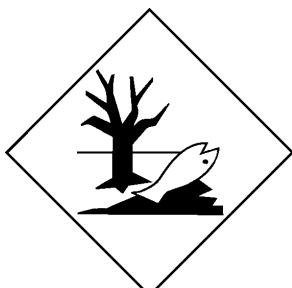
14. Transport information

DOT	
UN number	UN3432
UN proper shipping name	Polychlorinated biphenyls, solid
Transport hazard class(es)	
Class	9
Subsidiary risk	-
Label(s)	9
Packing group	II
Environmental hazards	
Marine pollutant	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	9, 81, 140, IB8, IP2, IP4, T3, TP33
Packaging exceptions	155
Packaging non bulk	212
Packaging bulk	240
IATA	
UN number	UN3432
UN proper shipping name	Polychlorinated biphenyls, solid
Transport hazard class(es)	
Class	9
Subsidiary risk	-
Packing group	II

Environmental hazards	No.
ERG Code	9L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed.
Cargo aircraft only	Allowed.
IMDG	
UN number	UN3432
UN proper shipping name	POLYCHLORINATED BIPHENYLS, SOLID
Transport hazard class(es)	
Class	9
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	Yes
EmS	F-A, S-A
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	Not applicable.
DOT; IATA; IMDG	



Marine pollutant



General information

IMDG Regulated Marine Pollutant. DOT Regulated 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.

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

3,3',5,5'-Tetrachlorobiphenyl (CAS 33284-52-5) 0.00005 % Annual Export Notification required.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

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 - No
- Pressure Hazard - No
- Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical**SARA 313 (TRI reporting)**

Chemical name	CAS number	% by wt.
3,3',5,5'-Tetrachlorobiphenyl	33284-52-5	100

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

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

Not regulated.

Clean Water Act (CWA) Hazardous substance
Section 112(r) (40 CFR 68.130) Bioaccumulative chemical of concern
 Toxic pollutant

Safe Drinking Water Act (SDWA) 0 mg/l
 0.0005 mg/l

US state regulations**US - New Jersey RTK - Substances: Listed substance**

3,3',5,5'-Tetrachlorobiphenyl (CAS 33284-52-5)

US - Pennsylvania RTK - Hazardous Substances: Special hazard

3,3',5,5'-Tetrachlorobiphenyl (CAS 33284-52-5)

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

3,3',5,5'-Tetrachlorobiphenyl (CAS 33284-52-5)

US. Massachusetts RTK - Substance List

3,3',5,5'-Tetrachlorobiphenyl (CAS 33284-52-5)

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

3,3',5,5'-Tetrachlorobiphenyl (CAS 33284-52-5)

US. Pennsylvania RTK - Hazardous Substances

3,3',5,5'-Tetrachlorobiphenyl (CAS 33284-52-5)

US. Pennsylvania Worker and Community Right-to-Know Law

3,3',5,5'-Tetrachlorobiphenyl (CAS 33284-52-5)

US. Rhode Island RTK

Not regulated.

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

3,3',5,5'-Tetrachlorobiphenyl (CAS 33284-52-5) Listed: October 1, 1989

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

3,3',5,5'-Tetrachlorobiphenyl (CAS 33284-52-5) Listed: January 1, 1991

International Inventories

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

Country(s) or region	Inventory name	On inventory (yes/no)*
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 (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*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).

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

Issue date 12-13-2016

Version # 01

NFPA ratings
 Health: 3
 Flammability: 0
 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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