SAFETY DATA SHEET



1. Identification

Product identifier European Regulation Standards PCB Congener Mixture-1

Other means of identification

Item M-EUPCB1K10

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 hazardsFlammable liquidsCategory 2Health hazardsSkin corrosion/irritationCategory 2

Specific target organ toxicity, single exposure Category 3 narcotic effects

Environmental hazards Hazardous to the aquatic environment, acute Category 1

hazard

Hazardous to the aquatic environment,

long-term hazard

OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement Highly flammable liquid and vapor. Causes skin irritation. May cause drowsiness or dizziness.

Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention Keep away from heat/sparks/open flames/hot surfaces. - No smoking. 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. Avoid breathing mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear

Category 1

protective gloves/eye protection/face protection.

Response 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. Call a poison center/doctor if you feel unwell. If skin irritation occurs: 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 Dispose of contents/container in accordance with local/regional/national/international regulations.

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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.

None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Isooctane	2,2,4-Trimethylpentane	540-84-1	99 - 100
2,2',3,3',4,4',5,5'-Octachlorobipher	ny	35694-08-7	0.001
2,2',3,3',4,4',5-Heptachlorobipheny	yl .	35065-30-6	0.001
2,2',3,4,4',5,5'-Heptachlorobipheny	yl .	35065-29-3	0.001
2,2',3,4,4',5'-Hexachlorobiphenyl		35065-28-2	0.001
2,2',3,4',5',6-Hexachlorobiphenyl		38380-04-0	0.001
2,2',4,4',5,5'-Hexachlorobiphenyl		35065-27-1	0.001
2,2',4,5,5'-Pentachlorobiphenyl		37680-73-2	0.001
2,2',5,5'-Tetrachlorobiphenyl		35693-99-3	0.001
2,2',5-Trichlorobiphenyl		37680-65-2	0.001
2,3,3',4,4'-Pentachlorobiphenyl		32598-14-4	0.001
2,3,3'-Trichlorobiphenyl		38444-84-7	0.001
2,3',4,4',5-Pentachlorobiphenyl		31508-00-6	0.001
2,4,4'-Trichlorobiphenyl		7012-37-5	0.001
2.2'.3.5'-Tetrachlorobiphenyl		41464-39-5	0.001
2.4'.5-Trichlorobiphenyl		16606-02-3	0.001

4. First-aid measures

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON 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. Wash contaminated clothing before reuse.

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

cause temporary irritation. Skin irritation. May cause redness and pain.

present and easy to do. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Indication of immediate medical attention and special

treatment needed

General information

Eye contact

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. Keep victim under observation. Symptoms may be delayed.

May cause drowsiness and dizziness. Headache. Nausea, vomiting. Direct contact with eyes may

Take off all contaminated clothing immediately. 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.

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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

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

Specific methods
General fire hazards

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

Highly flammable liquid and vapor.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid breathing 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: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. 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. 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. Use appropriate containment to avoid environmental contamination.

7. Handling and storage

Precautions for safe handling

Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. When using do not smoke. Explosion-proof general and local exhaust ventilation. 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. Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.

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. Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

US. OSHA Table Z-1 Limits for Air Components	Type	Value
2,2',3,4,4',5,5'-Heptachlorob iphenyl (CAS 35065-29-3)	PEL	1 mg/m3
2,2',3,4,4',5'-Hexachlorobip henyl (CAS 35065-28-2)	PEL	1 mg/m3
2,2',4,5,5'-Pentachlorobiphe nyl (CAS 37680-73-2)	PEL	1 mg/m3
2,2',5,5'-Tetrachlorobipheny I (CAS 35693-99-3)	PEL	1 mg/m3
2,4,4'-Trichlorobiphenyl (CAS 7012-37-5)	PEL	1 mg/m3
2.4'.5-Trichlorobiphenyl (CAS 16606-02-3)	PEL	1 mg/m3
Isooctane (CAS 540-84-1)	PEL	2350 mg/m3 500 ppm
US. ACGIH Threshold Limit Values Components	S Type	Value
2,2',3,4,4',5,5'-Heptachlorob iphenyl (CAS 35065-29-3)	TWA	1 mg/m3
2,2',3,4,4',5'-Hexachlorobip henyl (CAS 35065-28-2)	TWA	1 mg/m3
2,2',4,5,5'-Pentachlorobiphe nyl (CAS 37680-73-2)	TWA	1 mg/m3
2,2',5,5'-Tetrachlorobipheny I (CAS 35693-99-3)	TWA	1 mg/m3
2,4,4'-Trichlorobiphenyl (CAS 7012-37-5)	TWA	1 mg/m3
2.4'.5-Trichlorobiphenyl (CAS 16606-02-3)	TWA	1 mg/m3
US. NIOSH: Pocket Guide to Chem	ical Hazards	
Components	Туре	Value
2,2',3,3',4,4',5,5'-Octachloro biphenyl (CAS 35694-08-7)	TWA	0.001 mg/m3
2,2',3,3',4,4',5-Heptachlorob iphenyl (CAS 35065-30-6)	TWA	0.001 mg/m3
2,2',3,4',5',6-Hexachlorobip henyl (CAS 38380-04-0)	TWA	0.001 mg/m3
2,2',4,4',5,5'-Hexachlorobip henyl (CAS 35065-27-1)	TWA	0.001 mg/m3
2,2',5-Trichlorobiphenyl (CAS 37680-65-2)	TWA	0.001 mg/m3
2,3,3',4,4'-Pentachlorobiphe nyl (CAS 32598-14-4)	TWA	0.001 mg/m3
2,3,3'-Trichlorobiphenyl (CAS 38444-84-7)	TWA	0.001 mg/m3
2,3',4,4',5-Pentachlorobiphe nyl (CAS 31508-00-6)	TWA	0.001 mg/m3
2.2'.3.5'-Tetrachlorobipheny I (CAS 41464-39-5)	TWA	0.001 mg/m3
Isooctane (CAS 540-84-1)	Ceiling	1800 mg/m3 385 ppm
	TWA	350 mg/m3 75 ppm

SDS US

Exposure guidelines

US - California OELs: Skin designation

2,2',3,4,4',5,5'-Heptachlorobiphenyl (CAS 35065-29-3)
2,2',3,4,4',5'-Hexachlorobiphenyl (CAS 35065-28-2)
2,2',4,5,5'-Pentachlorobiphenyl (CAS 37680-73-2)
2,2',5,5'-Tetrachlorobiphenyl (CAS 35693-99-3)
2,4,4'-Trichlorobiphenyl (CAS 7012-37-5)
Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

2,2',3,4,4',5,5'-Heptachlorobiphenyl (CAS 35065-29-3)
2,2',3,4,4',5'-Hexachlorobiphenyl (CAS 35065-28-2)
2,2',4,5,5'-Pentachlorobiphenyl (CAS 37680-73-2)
2,2',5,5'-Tetrachlorobiphenyl (CAS 35693-99-3)
2,4,4'-Trichlorobiphenyl (CAS 7012-37-5)
Skin designation applies.

US - Tennessee OELs: Skin designation

2,2',3,4,4',5,5'-Heptachlorobiphenyl (CAS 35065-29-3)
Can be absorbed through the skin.
2,2',3,4,4',5'-Hexachlorobiphenyl (CAS 35065-28-2)
Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

2,2',3,4,4',5,5'-Heptachlorobiphenyl (CAS 35065-29-3)
2,2',3,4,4',5'-Hexachlorobiphenyl (CAS 35065-28-2)
2,2',4,5,5'-Pentachlorobiphenyl (CAS 37680-73-2)
2,2',5,5'-Tetrachlorobiphenyl (CAS 35693-99-3)
2,4,4'-Trichlorobiphenyl (CAS 7012-37-5)
2,4'.5-Trichlorobiphenyl (CAS 16606-02-3)

Can be absorbed through the skin.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

2,2',3,4,4',5,5'-Heptachlorobiphenyl (CAS 35065-29-3)
2,2',3,4,4',5'-Hexachlorobiphenyl (CAS 35065-28-2)
2,2',4,5,5'-Pentachlorobiphenyl (CAS 37680-73-2)
2,2',5,5'-Tetrachlorobiphenyl (CAS 35693-99-3)
2,4,4'-Trichlorobiphenyl (CAS 7012-37-5)
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 Chemical respirator with organic vapor cartridge and full facepiece.

Skin protection

Hand protection Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove

supplier.

Other Wear appropriate chemical resistant clothing.

Respiratory protection Chemical respirator with organic vapor cartridge and full facepiece.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using do not 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.FormLiquid.ColorNot available.

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

Melting point/freezing point -161.41 °F (-107.45 °C) estimated Initial boiling point and boiling 210.63 °F (99.24 °C) estimated

range

Flash point 40.1 °F (4.5 °C) estimated

Evaporation rate Not available.

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower

(%)

1.1 % estimated

Flammability limit - upper

(%)

4.7 % estimated

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure 59.93 hPa estimated

Vapor densityNot available.Relative densityNot available.

Solubility(ies)

Solubility (water) Not available.

Partition coefficient Not available.

(n-octanol/water)

Auto-ignition temperature 784 °F (417.78 °C) estimated

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

Other information

Density 0.69867 g/cm3 estimated

Explosive properties Not explosive.

Flammability class Flammable IB estimated

Oxidizing properties Not oxidizing.

Specific gravity 0.7 estimated

10. Stability and reactivity

ReactivityThe 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

Inhalation May cause drowsiness and dizziness. Headache. Nausea, vomiting. Prolonged inhalation may be

harmful.

Skin contact Causes skin irritation.

Eye contact Direct contact with eyes may cause temporary irritation.

Ingestion Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics

Headache. May cause drowsiness and dizziness. Nausea, vomiting. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity Narcotic effects.

Acute toxicity	Narcotic effects.	
Components	Species	Test Results
2,2',3,4,4',5,5'-Heptachlord	obiphenyl (CAS 35065-29-3)	
<u>Acute</u>		
Dermal		
LD50	Rabbit	8.65 g/kg
Oral		
LD50	Rat	0.794 g/kg
2,2',3,4,4',5'-Hexachlorobi	phenyl (CAS 35065-28-2)	
<u>Acute</u>		
Dermal		
LD50	Rabbit	8.65 g/kg
Oral		
LD50	Rat	0.794 g/kg
2,2',4,4',5,5'-Hexachlorobi	phenyl (CAS 35065-27-1)	
<u>Acute</u>		
Oral		
LD50	Mouse	> 64.3 mg/kg
2,2',4,5,5'-Pentachlorobiph	nenyl (CAS 37680-73-2)	
<u>Acute</u>		
Dermal		
LD50	Rabbit	8.65 g/kg
Oral		
LD50	Rat	0.794 g/kg
2,2',5,5'-Tetrachlorobipher	nyl (CAS 35693-99-3)	
<u>Acute</u>		
Dermal		
LD50	Rabbit	8.65 g/kg
Oral		
LD50	Rat	0.794 g/kg
2,4,4'-Trichlorobiphenyl (C	CAS 7012-37-5)	
<u>Acute</u>		
Dermal		
LD50	Rabbit	8.65 g/kg
Oral		
LD50	Rat	0.794 g/kg
2.4'.5-Trichlorobiphenyl (C	CAS 16606-02-3)	
<u>Acute</u>		
Dermal		
LD50	Rabbit	8.65 g/kg
Oral		
LD50	Rat	0.794 g/kg
Isooctane (CAS 540-84-1)		
<u>Acute</u>		
Dermal		
LD50	Rabbit	> 2000 mg/kg

Components	Species	Test Results
Inhalation		
LC50	Rat	> 33.52 mg/l, 4 Hours
Oral		
LD50	Rat	> 5000 mg/kg

^{*} Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye Di

Serious eye damage/ey

Direct contact with eyes may cause temporary irritation.

irritation

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

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

Germ cell mutagenicityNo data available to indicate product or any components present at greater than 0.1% are

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

2,2',3,3',4,4',5,5'-Octachlorobiphenyl (CAS 35694-08-7)	1 Carcinogenic to humans.
2,2',3,3',4,4',5-Heptachlorobiphenyl (CAS 35065-30-6)	1 Carcinogenic to humans.
2,2',3,4,4',5,5'-Heptachlorobiphenyl (CAS 35065-29-3)	1 Carcinogenic to humans.
2,2',3,4,4',5'-Hexachlorobiphenyl (CAS 35065-28-2)	1 Carcinogenic to humans.
2,2',3,4',5',6-Hexachlorobiphenyl (CAS 38380-04-0)	1 Carcinogenic to humans.
2,2',4,4',5,5'-Hexachlorobiphenyl (CAS 35065-27-1)	1 Carcinogenic to humans.
2,2',4,5,5'-Pentachlorobiphenyl (CAS 37680-73-2)	1 Carcinogenic to humans.
2,2',5,5'-Tetrachlorobiphenyl (CAS 35693-99-3)	1 Carcinogenic to humans.
2,2',5-Trichlorobiphenyl (CAS 37680-65-2)	1 Carcinogenic to humans.
2,3,3',4,4'-Pentachlorobiphenyl (CAS 32598-14-4)	1 Carcinogenic to humans.
2,3,3'-Trichlorobiphenyl (CAS 38444-84-7)	1 Carcinogenic to humans.
2,3',4,4',5-Pentachlorobiphenyl (CAS 31508-00-6)	1 Carcinogenic to humans.
2,4,4'-Trichlorobiphenyl (CAS 7012-37-5)	1 Carcinogenic to humans.
2.2'.3.5'-Tetrachlorobiphenyl (CAS 41464-39-5)	1 Carcinogenic to humans.
2.4'.5-Trichlorobiphenyl (CAS 16606-02-3)	1 Carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens

2,2',3,3',4,4',5,5'-Octachlorobiphenyl (CAS 35694-08-7)	Reasonably Anticipated to be a Human Carcinogen.
2,2',3,3',4,4',5-Heptachlorobiphenyl (CAS 35065-30-6)	Reasonably Anticipated to be a Human Carcinogen.
2,2',3,4,4',5,5'-Heptachlorobiphenyl (CAS 35065-29-3)	Reasonably Anticipated to be a Human Carcinogen.
2,2',3,4,4',5'-Hexachlorobiphenyl (CAS 35065-28-2)	Reasonably Anticipated to be a Human Carcinogen.
2,2',3,4',5',6-Hexachlorobiphenyl (CAS 38380-04-0)	Reasonably Anticipated to be a Human Carcinogen.
2,2',4,4',5,5'-Hexachlorobiphenyl (CAS 35065-27-1)	Reasonably Anticipated to be a Human Carcinogen.
2,2',4,5,5'-Pentachlorobiphenyl (CAS 37680-73-2)	Reasonably Anticipated to be a Human Carcinogen.
2,2',5,5'-Tetrachlorobiphenyl (CAS 35693-99-3)	Reasonably Anticipated to be a Human Carcinogen.
2,2',5-Trichlorobiphenyl (CAS 37680-65-2)	Reasonably Anticipated to be a Human Carcinogen.
2,3,3',4,4'-Pentachlorobiphenyl (CAS 32598-14-4)	Reasonably Anticipated to be a Human Carcinogen.
2,3,3'-Trichlorobiphenyl (CAS 38444-84-7)	Reasonably Anticipated to be a Human Carcinogen.
2,3',4,4',5-Pentachlorobiphenyl (CAS 31508-00-6)	Reasonably Anticipated to be a Human Carcinogen.
2,4,4'-Trichlorobiphenyl (CAS 7012-37-5)	Reasonably Anticipated to be a Human Carcinogen.
2.2'.3.5'-Tetrachlorobiphenyl (CAS 41464-39-5)	Reasonably Anticipated to be a Human Carcinogen.
2.4'.5-Trichlorobiphenyl (CAS 16606-02-3)	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

May cause drowsiness and dizziness.

Specific target organ toxicity - No

repeated exposure

Not classified.

Aspiration hazard Not an aspiration hazard.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity Very toxic to aquatic life with long lasting effects.

Components Species Test Results

2,2',3,3',4,4',5,5'-Octachlorobiphenyl (CAS 35694-08-7)

Aquatic

Fish LC50 Fathead minnow (Pimephales promelas) > 0.0002 mg/l, 96 hours

2,2',4,4',5,5'-Hexachlorobiphenyl (CAS 35065-27-1)

Aquatic

Fish LC50 Fathead minnow (Pimephales promelas) > 0.0013 mg/l, 96 hours

2,2',4,5,5'-Pentachlorobiphenyl (CAS 37680-73-2)

Aquatic

Fish LC50 Fathead minnow (Pimephales promelas) > 0.01 mg/l, 96 hours

2,2',5,5'-Tetrachlorobiphenyl (CAS 35693-99-3)

Aquatic

Fish LC50 Fathead minnow (Pimephales promelas) > 0.03 mg/l, 96 hours

2,2',5-Trichlorobiphenyl (CAS 37680-65-2)

Aquatic

Fish LC50 Fathead minnow (Pimephales promelas) 0.0338 mg/l, 96 hours

2,4,4'-Trichlorobiphenyl (CAS 7012-37-5)

Aquatic

Fish LC50 Fathead minnow (Pimephales promelas) > 0.16 mg/l, 96 hours

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

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

2,2',3,4,4',5,5'-Heptachlorobiphenyl	4.11
2,2',3,4,4',5'-Hexachlorobiphenyl	4.11
2,2',4,5,5'-Pentachlorobiphenyl	4.11
2,2',5,5'-Tetrachlorobiphenyl	4.11
2,4,4'-Trichlorobiphenyl	4.11
2.4'.5-Trichlorobiphenyl	4.11
Isooctane	5.18

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 instructionsCollect 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 codeThe 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 UN1262

UN proper shipping name Octanes, solution (Isooctane RQ = 1000 LBS)

Material name: European Regulation Standards PCB Congener Mixture-1
M-EUPCB1K10 Version #: 02 Revision date: 05-24-2016 Issue date: 05-24-2016

^{*} Estimates for product may be based on additional component data not shown.

Transport hazard class(es)

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

Marine pollutant Yes

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

IB2, T4, TP1 Special provisions

Packaging exceptions 150 Packaging non bulk 202 242 Packaging bulk

IATA

UN number UN1262

Octanes solution (Isooctane) UN proper shipping name

Transport hazard class(es)

Class 3 Subsidiary risk **Packing group** Ш **Environmental hazards** Yes **ERG Code** 3Н

Other information

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

Passenger and cargo

aircraft

Allowed. Cargo aircraft only

IMDG

UN1262 **UN** number

UN proper shipping name OCTANES SOLUTION (Isooctane)

Allowed.

Transport hazard class(es)

Class 3 Subsidiary risk Packing group Ш **Environmental hazards**

Yes Marine pollutant F-E, S-E **EmS**

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

Not established. Transport in bulk according to Annex II of MARPOL 73/78 and

the IBC Code

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.

0.00005 % Annual Export Notification required.

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

2,2',3,3',4,4',5,5'-Octachlorobiphenyl (CAS 35694-08-7) 2,2',3,3',4,4',5-Heptachlorobiphenyl (CAS 35065-30-6) 2,2',3,4,4',5,5'-Heptachlorobiphenyl (CAS 35065-29-3) 2,2',3,4,4',5'-Hexachlorobiphenyl (CAS 35065-28-2) 2,2',3,4',5',6-Hexachlorobiphenyl (CAS 38380-04-0) 2,2',4,4',5,5'-Hexachlorobiphenyl (CAS 35065-27-1) 2,2',4,5,5'-Pentachlorobiphenyl (CAS 37680-73-2) 2,2',5,5'-Tetrachlorobiphenyl (CAS 35693-99-3) 2,2',5-Trichlorobiphenyl (CAS 37680-65-2) 2,3,3',4,4'-Pentachlorobiphenyl (CAS 32598-14-4) 2,3,3'-Trichlorobiphenyl (CAS 38444-84-7) 2,3',4,4',5-Pentachlorobiphenyl (CAS 31508-00-6) 2,4,4'-Trichlorobiphenyl (CAS 7012-37-5) 2.2'.3.5'-Tetrachlorobiphenyl (CAS 41464-39-5) 2.4'.5-Trichlorobiphenyl (CAS 16606-02-3)

CERCLA Hazardous Substance List (40 CFR 302.4)

Isooctane (CAS 540-84-1)

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 - No 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)

Not regulated.

Material name: European Regulation Standards PCB Congener Mixture-1
M-EUPCB1K10 Version #: 02 Revision date: 05-24-2016 Issue date: 05-24-2016

SDS US

Other federal regulations

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

Isooctane (CAS 540-84-1)

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 - New Jersey RTK - Substances: Listed substance

2,2',3,3',4,4',5,5'-Octachlorobiphenyl (CAS 35694-08-7)

2,2',3,3',4,4',5-Heptachlorobiphenyl (CAS 35065-30-6)

2,2',3,4,4',5,5'-Heptachlorobiphenyl (CAS 35065-29-3)

2,2',3,4,4',5'-Hexachlorobiphenyl (CAS 35065-28-2)

2,2',3,4',5',6-Hexachlorobiphenyl (CAS 38380-04-0)

2,2',4,4',5,5'-Hexachlorobiphenyl (CAS 35065-27-1)

2,2',4,5,5'-Pentachlorobiphenyl (CAS 37680-73-2)

2.2'.5.5'-Tetrachlorobiphenyl (CAS 35693-99-3)

2,2',5-Trichlorobiphenyl (CAS 37680-65-2)

2,3,3',4,4'-Pentachlorobiphenyl (CAS 32598-14-4)

2,3,3'-Trichlorobiphenyl (CAS 38444-84-7)

2,3',4,4',5-Pentachlorobiphenyl (CAS 31508-00-6)

2,4,4'-Trichlorobiphenyl (CAS 7012-37-5)

2.2'.3.5'-Tetrachlorobiphenyl (CAS 41464-39-5)

2.4'.5-Trichlorobiphenyl (CAS 16606-02-3)

Isooctane (CAS 540-84-1)

US - Pennsylvania RTK - Hazardous Substances: Special hazard

2,2',3,3',4,4',5,5'-Octachlorobiphenyl (CAS 35694-08-7)

2,2',3,3',4,4',5-Heptachlorobiphenyl (CAS 35065-30-6)

2,2',3,4,4',5,5'-Heptachlorobiphenyl (CAS 35065-29-3)

2,2',3,4,4',5'-Hexachlorobiphenyl (CAS 35065-28-2)

2,2',3,4',5',6-Hexachlorobiphenyl (CAS 38380-04-0)

2,2',4,4',5,5'-Hexachlorobiphenyl (CAS 35065-27-1)

2,2',4,5,5'-Pentachlorobiphenyl (CAS 37680-73-2)

2,2',5,5'-Tetrachlorobiphenyl (CAS 35693-99-3)

2,2',5-Trichlorobiphenyl (CAS 37680-65-2)

2,3,3',4,4'-Pentachlorobiphenyl (CAS 32598-14-4)

2,3,3'-Trichlorobiphenyl (CAS 38444-84-7)

2,3',4,4',5-Pentachlorobiphenyl (CAS 31508-00-6)

2,4,4'-Trichlorobiphenyl (CAS 7012-37-5)

2.2'.3.5'-Tetrachlorobiphenyl (CAS 41464-39-5)

2.4'.5-Trichlorobiphenyl (CAS 16606-02-3)

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))

2,2',3,3',4,4',5,5'-Octachlorobiphenyl (CAS 35694-08-7)

2,2',3,3',4,4',5-Heptachlorobiphenyl (CAS 35065-30-6)

2,2',3,4,4',5,5'-Heptachlorobiphenyl (CAS 35065-29-3)

2,2',3,4,4',5'-Hexachlorobiphenyl (CAS 35065-28-2)

2,2',3,4',5',6-Hexachlorobiphenyl (CAS 38380-04-0)

2,2',4,4',5,5'-Hexachlorobiphenyl (CAS 35065-27-1)

2,2',4,5,5'-Pentachlorobiphenyl (CAS 37680-73-2)

2,2',5,5'-Tetrachlorobiphenyl (CAS 35693-99-3)

2,2',5-Trichlorobiphenyl (CAS 37680-65-2)

2,3,3',4,4'-Pentachlorobiphenyl (CAS 32598-14-4)

2,3,3'-Trichlorobiphenyl (CAS 38444-84-7)

2,3',4,4',5-Pentachlorobiphenyl (CAS 31508-00-6)

2,4,4'-Trichlorobiphenyl (CAS 7012-37-5)

2.2'.3.5'-Tetrachlorobiphenyl (CAS 41464-39-5)

2.4'.5-Trichlorobiphenyl (CAS 16606-02-3)

Isooctane (CAS 540-84-1)

US. Massachusetts RTK - Substance List

- 2,2',3,3',4,4',5,5'-Octachlorobiphenyl (CAS 35694-08-7)
- 2,2',3,3',4,4',5-Heptachlorobiphenyl (CAS 35065-30-6)
- 2,2',3,4',5',6-Hexachlorobiphenyl (CAS 38380-04-0)
- 2,2',4,4',5,5'-Hexachlorobiphenyl (CAS 35065-27-1)
- 2,2',5-Trichlorobiphenyl (CAS 37680-65-2)
- 2.3.3'.4.4'-Pentachlorobiphenyl (CAS 32598-14-4)
- 2.3.3'-Trichlorobiphenyl (CAS 38444-84-7)
- 2,3',4,4',5-Pentachlorobiphenyl (CAS 31508-00-6)
- 2.2'.3.5'-Tetrachlorobiphenyl (CAS 41464-39-5)

Isooctane (CAS 540-84-1)

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

- 2,2',3,3',4,4',5,5'-Octachlorobiphenyl (CAS 35694-08-7)
- 2,2',3,3',4,4',5-Heptachlorobiphenyl (CAS 35065-30-6)
- 2,2',3,4,4',5,5'-Heptachlorobiphenyl (CAS 35065-29-3)
- 2,2',3,4,4',5'-Hexachlorobiphenyl (CAS 35065-28-2)
- 2,2',3,4',5',6-Hexachlorobiphenyl (CAS 38380-04-0)
- 2,2',4,4',5,5'-Hexachlorobiphenyl (CAS 35065-27-1)
- 2,2',4,5,5'-Pentachlorobiphenyl (CAS 37680-73-2) 2,2',5,5'-Tetrachlorobiphenyl (CAS 35693-99-3)
- 2.2'.5-Trichlorobiphenyl (CAS 37680-65-2)
- 2,3,3',4,4'-Pentachlorobiphenyl (CAS 32598-14-4)
- 2,3,3'-Trichlorobiphenyl (CAS 38444-84-7)
- 2,3',4,4',5-Pentachlorobiphenyl (CAS 31508-00-6)
- 2,4,4'-Trichlorobiphenyl (CAS 7012-37-5)
- 2.2'.3.5'-Tetrachlorobiphenyl (CAS 41464-39-5)
- 2.4'.5-Trichlorobiphenyl (CAS 16606-02-3)

US. Pennsylvania RTK - Hazardous Substances

- 2,2',3,3',4,4',5,5'-Octachlorobiphenyl (CAS 35694-08-7)
- 2,2',3,3',4,4',5-Heptachlorobiphenyl (CAS 35065-30-6)
- 2,2',3,4',5',6-Hexachlorobiphenyl (CAS 38380-04-0)
- 2,2',4,4',5,5'-Hexachlorobiphenyl (CAS 35065-27-1)
- 2,2',5-Trichlorobiphenyl (CAS 37680-65-2)
- 2,3,3',4,4'-Pentachlorobiphenyl (CAS 32598-14-4)
- 2,3,3'-Trichlorobiphenyl (CAS 38444-84-7)
- 2,3',4,4',5-Pentachlorobiphenyl (CAS 31508-00-6)
- 2.2'.3.5'-Tetrachlorobiphenyl (CAS 41464-39-5)

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

- 2,2',3,3',4,4',5,5'-Octachlorobiphenyl (CAS 35694-08-7)
- 2,2',3,3',4,4',5-Heptachlorobiphenyl (CAS 35065-30-6)
- 2.2'.3.4.4'.5.5'-Heptachlorobiphenyl (CAS 35065-29-3)
- 2,2',3,4,4',5'-Hexachlorobiphenyl (CAS 35065-28-2)
- 2.2'.3.4'.5'.6-Hexachlorobiphenyl (CAS 38380-04-0)
- 2,2',4,4',5,5'-Hexachlorobiphenyl (CAS 35065-27-1)
- 2,2',4,5,5'-Pentachlorobiphenyl (CAS 37680-73-2)
- 2,2',5,5'-Tetrachlorobiphenyl (CAS 35693-99-3)
- 2,2',5-Trichlorobiphenyl (CAS 37680-65-2)
- 2,3,3',4,4'-Pentachlorobiphenyl (CAS 32598-14-4)
- 2,3,3'-Trichlorobiphenyl (CAS 38444-84-7)
- 2,3',4,4',5-Pentachlorobiphenyl (CAS 31508-00-6)
- 2,4,4'-Trichlorobiphenyl (CAS 7012-37-5)
- 2.2'.3.5'-Tetrachlorobiphenyl (CAS 41464-39-5)
- 2.4'.5-Trichlorobiphenyl (CAS 16606-02-3)

US. Rhode Island RTK

Isooctane (CAS 540-84-1)

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

- 2,2',3,4,4',5'-Hexachlorobiphenyl (CAS 35065-28-2) Listed: October 1, 1989
- 2,2',3,4',5',6-Hexachlorobiphenyl (CAS 38380-04-0) Listed: October 1, 1989
- 2,2',4,4',5,5'-Hexachlorobiphenyl (CAS 35065-27-1) Listed: October 1, 1989
- 2,2',4,5,5'-Pentachlorobiphenyl (CAS 37680-73-2) Listed: October 1, 1989

2,2',5,5'-Tetrachlorobiphenyl (CAS 35693-99-3) Listed: October 1, 1989 2,2',5-Trichlorobiphenyl (CAS 37680-65-2) Listed: October 1, 1989 2,3,3',4,4'-Pentachlorobiphenyl (CAS 32598-14-4) Listed: October 1, 1989 2,3,3'-Trichlorobiphenyl (CAS 38444-84-7) Listed: October 1, 1989 2,3',4,4',5-Pentachlorobiphenyl (CAS 31508-00-6) Listed: October 1, 1989 2,4,4'-Trichlorobiphenyl (CAS 7012-37-5) Listed: October 1, 1989 2.2'.3.5'-Tetrachlorobiphenyl (CAS 41464-39-5) Listed: October 1, 1989 2.4'.5-Trichlorobiphenyl (CAS 16606-02-3) Listed: October 1, 1989

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

2,2',3,3',4,4',5,5'-Octachlorobiphenyl (CAS Listed: January 1, 1991 35694-08-7) 2,2',3,3',4,4',5-Heptachlorobiphenyl (CAS Listed: January 1, 1991 35065-30-6) 2,2',3,4,4',5,5'-Heptachlorobiphenyl (CAS Listed: January 1, 1991 35065-29-3) 2,2',3,4,4',5'-Hexachlorobiphenyl (CAS 35065-28-2) Listed: January 1, 1991 2,2',3,4',5',6-Hexachlorobiphenyl (CAS 38380-04-0) Listed: January 1, 1991 2,2',4,4',5,5'-Hexachlorobiphenyl (CAS 35065-27-1) Listed: January 1, 1991 2,2',4,5,5'-Pentachlorobiphenyl (CAS 37680-73-2) Listed: January 1, 1991 2,2',5,5'-Tetrachlorobiphenyl (CAS 35693-99-3) Listed: January 1, 1991 2,2',5-Trichlorobiphenyl (CAS 37680-65-2) Listed: January 1, 1991 2,3,3',4,4'-Pentachlorobiphenyl (CAS 32598-14-4) Listed: January 1, 1991

2,3,3'-Trichlorobiphenyl (CAS 38444-84-7) Listed: January 1, 1991 2,3',4,4',5-Pentachlorobiphenyl (CAS 31508-00-6) Listed: January 1, 1991 2,4,4'-Trichlorobiphenyl (CAS 7012-37-5) Listed: January 1, 1991 2.2'.3.5'-Tetrachlorobiphenyl (CAS 41464-39-5) Listed: January 1, 1991 2.4'.5-Trichlorobiphenyl (CAS 16606-02-3) 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
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)	No

Toxic Substances Control Act (TSCA) Inventory *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

05-24-2016 Issue date **Revision date** 05-24-2016

Version # 02

United States & Puerto Rico

NFPA ratings Health: 2

Flammability: 3 Instability: 0

Yes

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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