

Material Safety Data Sheet

The content and format of this MSDS is accordant with GHS standard.

1. Identification of the substance/preparation and of the company/undertaking

.Product name : TBBPA carbonate oligomer

.Synonyms : Phenoxy-terminated tetrabromobisphenol-A carbonate oligomer; BC52

.Application of the substance: Mainly used as fire-retardant for plastic.

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2. Hazards identification

.GHS classification according to Annex II :

Health hazards	Environmental hazards	Physical hazards
Acute toxicity (oral)- not classified Acute toxicity (dermal)-not classified Acute toxicity (inhalation)-not classified Skin corrosion/irritation- 3 Serious eye damage/eye irritation- 2B Respiratory sensitizer-not classified Skin sensitizer- not classified Germ cell mutagenicity- not classified Carcinogenicity- not classified Toxic to reproduction- not classified STOT SE-not classified STOT RE- not classified Aspiration hazard- not classified	Acute hazards to the aquatic environment-not classified Chronic hazards to the aquatic environment- not classified	Explosives-not classified Flammable gases-not classified Flammable aerosols-not classified Gases under pressure- not classified Flammable liquids- not classified Flammable solids-not classified Self-reactive substances and mixtures-not classified Pyrophoric liquids-not classified Pyrophoric solids-not classified Self-heating substances and mixtures-not classified Substances and mixtures, which in contact with water, emit flammable gases-not classified Oxidizing liquids-not classified Oxidizing solids-not classified Organic peroxides-not classified Corrosive to metals-not classified

.Label elements:

.Signal word: Warning

.Symbol : None

.Hazard Statement:

H316: Causes mild skin irritation.

H320: Causes eye irritation (slight).

.Precautionary Statements:

P280: Wear protective gloves.

P264: Wash hands thoroughly after handling.

P261: Avoid breathing dust.

P270: Do not eat, drink or smoke when using this product.

.Response Precautionary Statements:

P305 + P351 + P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+313: If eye irritation persists, get medical advice/attention

P302+352 : IF ON SKIN: Wash with soap and water.

P301+330+331+312: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER or doctor/physician if you feel unwell.

.Storage precautionary statements

P402+404: Store in a dry place. Store in a closed container.

.Disposal precautionary statements :

P501: Dispose of contents/container to relevant local and national regulations.

3. Composition/information on ingredients

Product description: substance (✓); preparation ()

Ingredients	CAS	EINECS	Risk-phrases	% by weight
TBBPA carbonate oligomer	94334-64-2	---	None	99%

Note: This substance is not listed into The List of Harmonised Classification and Labelling of Hazardous Substances from Annex I to Directive 67/578/EEC.

4 First aid measures

Persons using this product should consult a physician or other medical professional if an accident involving this product in injury. Specific first-aid measures are as follows:

.Eyes Contact: Immediately raise eyelids and flush with plenty of water at least for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation persists, seek medical care.

.Skin Contact: Immediately water contaminated area with plenty of water and soap. Remove all contaminated clothing and

wash thoroughly before reuse.

.Inhalation: Remove to fresh air. Call a POISON CENTER or doctor/physician if you feel unwell.

.Ingestion: Do not induce vomiting without professional instruction. Get medical attention immediately.

5. Fire-fighting measures

.Flash point: Not applicable

.Flammable/Explosive Limits-Lower Vol %: Not available

.Flammable/Explosive Limits-Upper Vol %: Not available

.Extinguishing Media: This product is not flammable. As for fire caused by other ignition sources, use dry chemical or sand for small fire; foam or CO₂ for large fire. Seek advice from local fire-fighting authority.

.Fire Fighting Equipments: Firefighters must wear self-contained breathing apparatus and full protective equipment.

.Unusual Fire and Explosion Hazards: None.

.Hazardous Combustion Products: Carbon monoxide, carbon dioxide, hydrogen bromine, carbonyl bromine may be released from thermal decomposition.

6. Accidental release measures

.Personal precautions: Use proper personal protective equipment as indicated in Section 8.

.Measures for Cleaning/Collection:

Small Spill:

Sweep up with care to avoid generating dust. Collect it into a proper container for disposal.

Large Spill:

Cover the spilled powder with plastic cloth or canvas. Try to recycle it.

Prevent entry into sewers or confined areas.

.Environmental Precautions: Keep cleaning run-offs out of municipal sewers and open bodies of water. Comply with local and national laws and regulations.

7. Handling and storage

.Handling:

Do not breathe powder or fume that may be evolved during processing.

Workers must wear proper protective equipments and must operate strictly according to relative rules.

.Information about fire- and explosion protection:

Keep ignition sources away—Do not smoke.

.Storage:

.Requirements to be met by storerooms: Store it in a well-ventilated, cool and dry store room.

.Additional Information: The storeroom should be equipped with proper facilities for accidental leakage.

8. Exposure controls/personal protection

Ingredients	OSHA PEL-TWA	ACGIH TLV-TWA
TBBPA carbonate oligomer (CAS: 94334-64-2)	0.5mg/m ³	0.5mg/m ³

.Engineering Controls:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate vapor or fume, use ventilation to keep exposure to airborne contaminants below the exposure limit.

.Personal Protective Equipments(for workers):

.Protection of Hands:

Wear protective gloves.



.Protection of Eyes:

No special requirements under normal conditions. Wear safety glasses when power may contact eyes or working in a dusty environment.



.Respiratory Protection: Use an approved respirator if exposure limits are exceeded or if irritation or other symptoms occur.

.Protection of Body:

Recommend wearing uniforms.



.General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.
Avoid contact with eyes and broken skin.

9. Physical and chemical properties

.General Information	
.Form:	Powder and grain
.Color:	White
.Odor:	Odorless
.Boiling Range:	Not available
.Melting point/Melting range:	210-230°C
.Decomposition temperature:	>300°C
.Flash point:	Not applicable
.Specific gravity(water=1)	2.2
.Self-igniting temperature:	Not applicable
.Flammable/Explosive Limits-Lower Vol %:	Not applicable
.Flammable/Explosive Limits-Upper Vol %:	Not applicable
.Molecular weight:	2500
.Vapor density:	Not available
.Vapor pressure:	Not available
.Solubility in/Miscibility with Water:	Insoluble in water
.PH-Value (@25°C) :	Not available

10. Stability and reactivity

.Chemical Stability: Stable under normal temperatures and pressures.

.Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, hydrogen bromine, carbonyl bromine may be released from thermal decomposition.

.Incompatibilities: Strong oxidizing agents, fluorine, bromine, chlorine

.Hazardous Polymerizations: Will not occur.

.Conditions to Avoid: Moisture and overexposure to sunlight.

11. Toxicological information

.Product Toxicity Data: The toxicity data of this product has not been determined by testing, but to our best knowledge and literature, this substance is not toxic The toxicity data shown below is for reference only.

Ingredients	CAS	LD 50
TBBPA carbonate oligomer	94334-64-2	Acute Oral LD50 > 5,000mg/kg (rat)

.Contact with Eyes: It may cause slight irritation to eyes. Symptoms may include tear and redness.

- .Contact with Skin:** It causes slight irritation to skin. For long-time or repeated contact, it may cause dryness.
- .Inhalation:** Under normal conditions of use and handling, no inhalation hazard is present. It may cause irritation to respiratory system if inhaling dust or powder.
- .Ingestion:** May be harmful by ingestion. May cause irritation to intestinal tract and stomach. Symptoms may include nausea, vomiting or diarrhea.
- .Effects of Overexposure – Chronic:** Not found.
- .Carcinogenicity:** Not listed by NTP, IARC, OSHA and ACGIH.
- .Sensitivity:** Not found.
- .Teratogenicity:** Not found.
- .Mutagenicity:** Not found.

12. Ecological information

- .Ecotoxicity:** No data available
- .Persistence and Degradability:** This product is biodegradable.
- .Bioaccumulative Potential:** Not found.
- .Mobility in Soil:** No relevant data.
- .Notes:**
 - Do not allow product to reach ground water, water course or sewage system.

13. Disposal considerations

- Do not allow product to reach sewage system.
- Do not throw it into any open bodies of water.
- Waste recycling must be operated strictly according to relevant regulations.

14. Transport Information

DOT:

- .Proper Shipping Name:** Not regulated.
- .Hazard Class:** Not classified.
- .UN Code:** Not regulated.
- .Packing Group:** Not classified.

Air-Transportation- Air-Transportation- IATA/ICAO:

- .Proper Shipping Name:** Not regulated.
- .Hazard Class:** Not classified.
- .UN Code:** Not regulated.
- .Packing Group:** Not classified.

Sea-Transportation-IMO/IMDG:

.Proper Shipping Name: Not regulated.

.Hazard Class: Not classified.

.UN Code: Not regulated.

.Packing Group: Not classified.

.EMS NO.: Not regulated.

.Recommendation for Packing Method: Recommend using woven bags with plastic lining.

.Note:

Check whether the package is completed or sealed before transporting; make sure there are no damage and no falling down of packages during transporting; the transport vehicle should be equipped with fire-fighting equipments and emergency facilities for handling with release; do NOT transport this product together with incompatible substances; stay away from fire and areas of high temperature during stopovers.

15. Regulatory information

.Domestic Laws and Regulations:

.General rule for classification and hazard communication of chemicals(GB 13690-2009):

Skin corrosion/irritation- 3;

Serious eye damage/eye irritation- 2B

.Dangerous Chemicals Safety Management Regulations:

Not applicable.

.Dangerous Chemicals Registration Management:

Not applicable.

.International Laws and Regulations:

.TSCA (Toxic Substance Control Act): This substance is on the U.S. Toxic Substances Control Act Chemical Substance Inventory.

. 67/548/EECAnnex III and Annex IV:

Not listed.

.Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

.SARA 313: This product doesn't contain SARA 313 Toxic Release Chemicals.

.Proposition 65: Not applicable

.Carcinogenicity categories: Not listed by EPA, IARC and NTP.

16. Other information

DISCLAIMER: This data contained herein are furnished for information only and are believed to be reliable. However, Baoxu Chemical. doesn't assume responsibility for any results obtained by persons over whose methods are not controlled. It is the user's responsibility to determine the suitability of products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of this product. Baoxu Chemical further disclaims any liability for consequential or incidental damages of any kind, including lost profits.

References:

GHS Annex II
GHS SDS Instruction
GB 15258-2009
GB 16483-2008
GB 13690-2009

Full description of some acronyms:

GHS-Globally Harmonized System of Classification and Labelling of Chemicals
CAS-Chemical Abstracts Service
EINECS-European Inventory of Existing Commercial Chemical Substances
IMO-International Maritime Organization
IMDG-International Maritime Dangerous Goods
IATA-International Air Transport Association
ICAO-International Civil Aviation Organization
TSCA-Toxic Substance Control Act
OSHA-Occupational Safety and Health Administration
ACGIH- American Conference of Governmental Industrial Hygienists

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*****The End*****