



# SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.0  
Creation Date: July 15, 2019  
Revision Date: July 15, 2019

---

## SECTION 1: Identification

### 1.1 GHS Product identifier

**Product name** Bis(pentabromophenyl) ether

### 1.2 Other means of identification

**Product number** -  
**Other names** FR-10; DECA; br55n

### 1.3 Recommended use of the chemical and restrictions on use

**Identified uses** Industrial and scientific research use.  
**Uses advised against** no data available

### 1.4 Supplier's details

**Company** Shanghai Yien Chemical Technology Co., Ltd  
**Address** Building 6, 28 Yingong Road, Fengxian District, Shanghai  
Chemical Industry Zone, Shanghai, 201400, China  
**Telephone** +86-400-133-2688

### 1.5 Emergency phone number

**Emergency phone number** +86-400-133-2688  
**Service hours** Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

---

## SECTION 2: Hazard identification

### 2.1 Classification of the substance or mixture

Not classified.

### 2.2 GHS label elements, including precautionary statements

**Pictogram(s)** No symbol.  
**Signal word** No signal word  
**Hazard statement(s)** none  
**Precautionary statement(s)**  
**Prevention** none  
**Response** none  
**Storage** none  
**Disposal** none

### 2.3 Other hazards which do not result in classification

no data available

---

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Bis(pentabromophenyl) ether	Bis(pentabromophenyl) ether	1163-19-5	214-604-9	100%

---

## SECTION 4: First-aid measures

### 4.1 Description of necessary first-aid measures

#### If inhaled

Fresh air, rest.

#### Following skin contact

Rinse and then wash skin with water and soap.

#### Following eye contact

Rinse with plenty of water (remove contact lenses if easily possible).

#### Following ingestion

Rinse mouth. Give one or two glasses of water to drink.

### 4.2 Most important symptoms/effects, acute and delayed

**SYMPTOMS:** Symptoms of exposure to this compound may include irritation of the skin, eyes, mucous membranes and upper respiratory tract. It may also cause diarrhea, liver damage and kidney damage. Chronic exposure may cause intoxication. **ACUTE/CHRONIC HAZARDS:** This compound is an irritant of the skin, eyes, mucous membranes and upper respiratory tract. It may be harmful by inhalation, ingestion and skin absorption. When heated to decomposition it emits toxic fumes of carbon monoxide and carbon dioxide. It may also emit fumes of hydrogen bromide. (NTP, 1992)

### 4.3 Indication of immediate medical attention and special treatment needed, if necessary

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR if necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on the left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. Poisons A and B

---

## SECTION 5: Fire-fighting measures

### 5.1 Suitable extinguishing media

Wear self contained breathing apparatus for fire fighting if necessary.

### 5.2 Specific hazards arising from the chemical

Flash point data for this chemical are not available; however, it is probably combustible. (NTP, 1992)

### 5.3 Special protective actions for fire-fighters

In case of fire in the surroundings, use appropriate extinguishing media.

---

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into covered containers. If appropriate, moisten first to

prevent dusting.

## **6.2 Environmental precautions**

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting.

## **6.3 Methods and materials for containment and cleaning up**

ACCIDENTAL RELEASE MEASURES: Personal precautions, protective equipment and emergency procedures Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Avoid breathing dust.; Environmental precautions: Do not let product enter drains.; Methods and materials for containment and cleaning up: Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

---

# **SECTION 7: Handling and storage**

## **7.1 Precautions for safe handling**

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

## **7.2 Conditions for safe storage, including any incompatibilities**

Separated from food and feedstuffs. Keep container tightly closed in a dry and well-ventilated place. Keep in a dry place.

---

# **SECTION 8: Exposure controls/personal protection**

## **8.1 Control parameters**

**Occupational Exposure limit values**

no data available

**Biological limit values**

no data available

## **8.2 Appropriate engineering controls**

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

## **8.3 Individual protection measures, such as personal protective equipment (PPE)**

**Eye/face protection**

Wear safety spectacles.

**Skin protection**

Protective gloves.

**Respiratory protection**

Use ventilation.

**Thermal hazards**

no data available

---

# **SECTION 9: Physical and chemical properties and safety characteristics**

<b>Physical state</b>	Solid. Powder.
<b>Colour</b>	Whitish.
<b>Odour</b>	Odorless

<b>Melting point/freezing point</b>	304 °C. Remarks: Measurement performed at sea level and room temperature.
<b>Boiling point or initial boiling point and boiling range</b>	256°C(lit.)
<b>Flammability</b>	Not combustible.
<b>Lower and upper explosion limit/flammability limit</b>	no data available
<b>Flash point</b>	96°C(lit.)
<b>Auto-ignition temperature</b>	no data available
<b>Decomposition temperature</b>	no data available
<b>pH</b>	no data available
<b>Kinematic viscosity</b>	no data available
<b>Solubility</b>	less than 1 mg/mL at 68° F (NTP, 1992)
<b>Partition coefficient n-octanol/water</b>	log Pow = 6.625. Temperature: 25 °C.
<b>Vapour pressure</b>	0 Pa. Temperature: 21 °C.
<b>Density and/or relative density</b>	2.63. Temperature: 20 °C.
<b>Relative vapour density</b>	no data available
<b>Particle characteristics</b>	no data available

---

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

On combustion, forms toxic fumes.

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

DECABROMODIPHENYL OXIDE is incompatible with strong oxidizers (NTP, 1992).

### 10.4 Conditions to avoid

no data available

### 10.5 Incompatible materials

Strong oxidizing agents

### 10.6 Hazardous decomposition products

When heated to decomposition it emits toxic fumes of /hydrogen bromide/.

---

## SECTION 11: Toxicological information

### Acute toxicity

- Oral: no data available
- Inhalation: LC50 - rat (male/female) - > 48.2 mg/L air (nominal).
- Dermal: no data available

### Skin corrosion/irritation

no data available

### Serious eye damage/irritation

no data available

### Respiratory or skin sensitization

no data available

#### **Germ cell mutagenicity**

no data available

#### **Carcinogenicity**

Evaluation: No epidemiological data relevant to the carcinogenicity of decabromodiphenyl oxide. There is limited evidence in experimental animals for the carcinogenicity of decabromodiphenyl oxide. Overall evaluation: Decabromodiphenyl oxide is not classifiable as to its carcinogenicity to humans (Group 3).

#### **Reproductive toxicity**

no data available

#### **STOT-single exposure**

no data available

#### **STOT-repeated exposure**

The substance may have effects on the thyroid.

#### **Aspiration hazard**

A nuisance-causing concentration of airborne particles can be reached quickly.

---

## **SECTION 12: Ecological information**

### **12.1 Toxicity**

- Toxicity to fish: LC50 - *Oryzias latipes* - > 500 mg/L - 48 wk.
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: EC50 - *S. costatum* (72 hr), *T. pseudonana* (72 hr), *Chlorella* sp (96 hr). - > 1 mg/L - 72 h.
- Toxicity to microorganisms: EC50 - activated sludge of a predominantly domestic sewage - > 15 mg/L - 3 h. Remarks: Respiration rate.

### **12.2 Persistence and degradability**

AEROBIC: Decabromodiphenyl ether was judged to be moderate to hard to degrade according to results obtained by the "cultivation method" in which 27% and 4% degradation occurred in 3 days in river water and coastal sea water inoculum, respectively, in Japan(1). Decabromodiphenyl ether, present at 100 mg/L, reached 0% of its theoretical BOD in 2 weeks using an activated sludge inoculum at 30 mg/L in the Japanese MITI test which classified the compound as not readily biodegradable(2). A soil degradation study found that soils spiked with 1, 10, and 100 mg/kg decabromodiphenyl ether showed no degradation after 160 days of incubation(3).

### **12.3 Bioaccumulative potential**

BCF values of <5 to <50 were measured in fish for decabromodiphenyl ether(SRC) using carp (*Cyprinus carpio*) which were exposed over a 6-week period(1). Forty-eight hour fish (species not reported) bioconcentration studies with C14-labeled decabromodiphenyl ether revealed no measurable bioconcentration in fish filets; the measured BCF was 0.3(2). Rainbow trout (*Onchorhynchus mykiss*) exposed to decabromobiphenyl ether during a 120-day study contained this compound at 38 ng/g of fresh weight in muscle tissue and up to 870 ng/g of fresh weight in the liver(3). An uptake of approximately 0.005% was calculated from decabromodiphenyl ether concentrations in muscle tissue and the mean dietary dose of decabromodiphenyl ether; this value does not include the sum of the metabolites of this compound(3). Using juvenile lake trout (*Salvelinus namaycush*) and a 56-day period, decabromodiphenyl ether had a BCF of <1(4). According to a classification scheme(5), these BCF values suggest the potential for bioconcentration in aquatic organisms is low. Wild blue mussels (*Mytilus edulis*) collected on the Dutch coast were put through depuration for 24 hours; decabromodiphenyl ether concentrations dropped from 3350 to 50 ng/g of extractable lipids in one test and from 1580 to 480 ng/g of extractable lipids in another(6). Plankton, Diporeia, lake whitefish, lake trout, and Chinook salmon were collected from Lake Michigan in 2006 between April and August to study the bioaccumulation and biomagnification of polybrominated diphenyl ethers in a food web of

Lake Michigan(7); decabromodiphenyl ether did not biomagnify in the food web(7). A microcosm study using carp (*Cyprinus carpio*) found no bioaccumulation of decabromodiphenyl ether after 20 and 50-day exposure periods(8).

## 12.4 Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc of decabromodiphenyl ether can be estimated to be  $2.8 \times 10^5$ (SRC). According to a classification scheme(2), this estimated Koc value suggests that decabromodiphenyl ether is expected to be immobile in soil.

## 12.5 Other adverse effects

no data available

---

# SECTION 13: Disposal considerations

## 13.1 Disposal methods

### Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

### Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

---

# SECTION 14: Transport information

## 14.1 UN Number

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

## 14.2 UN Proper Shipping Name

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

## 14.3 Transport hazard class(es)

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

## 14.4 Packing group, if applicable

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

## 14.5 Environmental hazards

ADR/RID: No

IMDG: No

IATA: No

## 14.6 Special precautions for user

no data available

## 14.7 Transport in bulk according to IMO instruments

no data available

---

# SECTION 15: Regulatory information

## 15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Bis(pentabromophenyl) ether	Bis(pentabromophenyl) ether	1163-19-5	214-604-9
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Not Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.
Korea Existing Chemicals List (KECL)			Listed.

---

## SECTION 16: Other information

### Information on revision

**Creation Date** July 15, 2019

**Revision Date** July 15, 2019

### Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

### References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

### Other Information

The substance has a variable melting and boiling range, reflecting the nature of the material and the individual manufacturing processes.

**Any questions regarding this SDS, Please send your inquiry to [sds@xixisys.com](mailto:sds@xixisys.com)**

---

*Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.*