



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
US OSHA

Revision date 20-Aug-2020

Supersedes Date: 06-Oct-2015

Revision Number 8

## 1. Identification

### Product identifier

Product Name FR-720

### Other means of identification

Product Code(s) 9536-FR

Chemical name Tetrabromobisphenol A, Bis (2,3-dibromopropyl ether )

Chemical Family Halogenated bisphenol derivative

Synonyms TBBA-bis(2,3-dibromopropyl ether),  
TBBPA-DBPE  
SR-720

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

Recommended use Flame retardant used in polypropylene, HIPS (high impact polystyrene).

Restrictions on use No information available

### Details of the supplier of the safety data sheet

#### Supplier Address

ICL  
622 Emerson Road - Suite 500  
St. Louis, Missouri 63141, USA  
Tel:(314)983-7884 Fax:(314)983-7607  
e-mail:msdsinfo@icl-group.com

### Emergency telephone number

Emergency Telephone Chemtrec 1-800-424-9300

## 2. Hazard(s) identification

### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Combustible dust	Yes
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### Hazards not otherwise classified (HNOC)

Not Applicable

### Label elements

Signal word

Warning

**Hazard statements**

May form combustible dust concentrations in air

**Other information**

Not Applicable

**3. Composition/information on ingredients****Substance**

Chemical name	CAS No.	Weight-%
Tetrabromobisphenol A,Bis (2,3-dibromopropyl ether)	21850-44-2	>93

**4. First-aid measures****Description of first aid measures**

<b>Inhalation</b>	Supply fresh air; consult doctor in case of symptoms.
<b>Eye contact</b>	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
<b>Skin contact</b>	Wash skin with soap and water. In the case of skin irritation or allergic reactions see a physician.
<b>Ingestion</b>	If swallowed, wash mouth thoroughly with plenty of water. Get medical attention immediately. NOTE: Never give an unconscious person anything to drink

**Most important symptoms and effects, both acute and delayed**

<b>Symptoms</b>	No information available. .
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**Indication of any immediate medical attention and special treatment needed**

<b>Note to physicians</b>	Treat symptomatically and supportively.
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**5. Fire-fighting measures**

<b>Suitable Extinguishing Media</b>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
<b>Unsuitable extinguishing media</b>	Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.
<b>Specific hazards arising from the chemical</b>	When heated to decomposition, may release poisonous and corrosive fumes of HBr. Dust may form an explosive mixture with air. [Kst=77 bar.m.s(-1)].
<b>Special protective equipment for fire-fighters</b>	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

**6. Accidental release measures****Personal precautions, protective equipment and emergency procedures**

**Personal precautions** Ensure adequate ventilation. Avoid generation of dust.

#### **Methods and material for containment and cleaning up**

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Pick up and transfer to properly labeled containers. .

**Environmental precautions** Should not be released into the environment. See Section 12 for additional Ecological Information.

**Reference to other sections** See section 8 for more information. See section 13 for more information.

## **7. Handling and storage**

#### **Precautions for safe handling**

**Advice on safe handling** Handle in accordance with good industrial hygiene and safety practice. Avoid generation of dust.

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

**Storage Conditions** Keep container tightly closed in a dry and well-ventilated place.

## **8. Exposure controls/personal protection**

#### **Control parameters**

**Exposure Limits** This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Tetrabromobisphenol A,Bis (2,3-dibromopropyl ether) 21850-44-2	-	-	-

**Manufacturers Recommendation** 5 mg/m<sup>3</sup>

#### **Appropriate engineering controls**

**Engineering controls** Showers  
Eyewash stations  
Ventilation systems  
Ventilation must be sufficient to maintain atmospheric concentration below recommended exposure limit.

#### **Individual protection measures, such as personal protective equipment**

**Eye/face protection** Chemical safety goggles.

**Hand protection** Protective gloves

**Respiratory protection** Dust respirator.

**Skin and body protection** Wear suitable protective clothing.

**General hygiene considerations** Handle in accordance with good industrial hygiene and safety practice.

## **9. Physical and chemical properties**

**Information on basic physical and chemical properties**

Physical state	Solid
Appearance	crystalline powder
Color	white
Odor	None
Odor threshold	Not determined

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	no data available	None known
Melting point / freezing point	113-117°C	
Boiling point / boiling range	no data available	None known
Flash point	no data available	None known
Evaporation rate	Not available	
Flammability (solid, gas)	no data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	no data available	
Lower flammability or explosive limits	no data available	
Vapor pressure	0.029 Pa (20°C)	
Vapor density	Not available	
Relative density	2.3	
Water solubility	0.144 µg/l (20°C)	
Solubility in other solvents	no data available	None known
Partition coefficient	Log Pow : 7.21 Estimated	
Autoignition temperature	740 °C dust / 1364 °F	
Decomposition temperature	306°C	
Kinematic viscosity	no data available	None known
Dynamic viscosity	no data available	None known

**Other information**

Oxidizing properties	The structure indicates non oxidizing properties
Explosive properties	no data available
Molecular weight	944
Bulk density	0.96 @ 20°C

**10. Stability and reactivity**

Reactivity	No reactive hazards known/expected.
Chemical stability	Stable under normal conditions. .
Possibility of Hazardous Reactions	None under normal processing. .
Conditions to avoid	Heating above decomposition temperature. .
Incompatible materials	None known based on information supplied.
Hazardous decomposition products	HBr.

**11. Toxicological information****Information on likely routes of exposure****Product Information****Symptoms related to the physical, chemical and toxicological characteristics**

**Symptoms** No information available.

**Acute toxicity**

**Numerical measures of toxicity**

**Component information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Tetrabromobisphenol A,Bis (2,3-dibromopropyl ether) 21850-44-2	>2000 mg/kg (Rat)	> 2000 mg/kg (Rat)	>24.4 mg/l (1h) (Rat)

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Skin corrosion/irritation** Not irritant.

**Serious eye damage/irritation** Slightly irritant. Does not meet classification criteria.

**Respiratory or skin sensitization** Not a skin sensitizer.

**Germ cell mutagenicity** Mutagenic by the Ames Test. (internal study).  
Not mutagenic by the Ames Test (NTP study).  
Not mutagenic in the mouse lymphoma L5178Y test system.  
Negative in the micronucleus study (NTP study in mice).

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen

Chemical name	ACGIH	IARC	NTP	US OSHA
Tetrabromobisphenol A,Bis (2,3-dibromopropyl ether) 21850-44-2	-	-	-	-

**Reproductive toxicity** Based on available data, the classification criteria are not met.  
NOAEL 1000 mg/kg bw/day (rat, oral).

**Teratogenicity** Not established.

**STOT - single exposure** Based on available data, the classification criteria are not met.

**STOT - repeated exposure** Based on available data, the classification criteria are not met.  
NOAEL 2000 mg/kg bw /day (90 days oral, mice).

**Aspiration hazard** Not expected.

## 12. Ecological information

**Ecotoxicity** .

**Component information**

Chemical name	Algae/aquatic plants	Fish	Crustacea	Toxicity to microorganisms
Tetrabromobisphenol A,Bis (2,3-dibromopropyl ether) 21850-44-2	> 100 mg/L (72h, Selenastrum capricornutum, nominal concentration WAF)	>100 mg/L nominal concentration WAF (96h, Rainbow trout) > 500 mg/L (96h, BCF<100) in Carp	>100 mg/L (48h, Daphnia magna, nominal concentration WAF)	-

**Persistence and degradability** Not readily biodegradable

**Bioaccumulation** No bioaccumulation was detected in earthworms (*Eisenia fetida*, 21 days). BCF=3.4~130.

#### Component information

Chemical name	Partition coefficient
Tetrabromobisphenol A,Bis (2,3-dibromopropyl ether) 21850-44-2	7.2

**Mobility** The adsorption-coefficient log Koc is >>5.63 (OECD 121)

**Other adverse effects** The product was analysed for polybrominated p-Dibenzodioxins and Dibenzofurans contamination. The results show that no polybrominated Dibenzodioxins and Dibenzofurans higher than the limits of quantitation according to the Toxic Substance Control Act (TSCA) 40/CFR 766.27 are present. Also the limits of the german ordinance (Chemikalien-Verbotsverordnung) for polybrominated Dibenzodioxins and Dibenzofurans are fulfilled.

### 13. Disposal considerations

#### Waste treatment methods

**Waste from residues/unused products** Observe all federal, state and local environmental regulations when disposing of this material.

**Contaminated packaging** Empty containers should be disposed of in accordance with all applicable laws and regulations.

### 14. Transport information

**DOT** Not regulated

**TDG** Not regulated

**MEX** Not regulated

**IATA** Not regulated

**Special precautions** None

**IMDG** Not regulated

**Special precautions** None

### 15. Regulatory information

#### International Inventories

GHS hazardous component CAS registry numbers appearing in section 3 may differ from substances appearing in section 15 due to country or regional chemical inventory coverage requirements, however, remain in compliance with the inventory. Products that are used as food additives are exempt from listing in international chemical inventories.

Chemical name	TSCA Inventory List Active/Inactive
Tetrabromobisphenol A,Bis (2,3-dibromopropyl ether) 21850-44-2 ( >93 )	Present (ACTIVE)

**TSCA** Listed or exempted

DSL	Not Listed
ENCS	Listed or exempted
IECSC	Listed or exempted
KECL	Listed or exempted
PICCS	Listed or exempted
AICS	Listed or exempted
NZIoC	Not Listed
TCSI	Listed or exempted
NCI	Listed or exempted
TECI	Listed or exempted
NSQ	Not Listed

**Legend:**

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List  
**ENCS** - Japan Existing and New Chemical Substances  
**IECSC** - China Inventory of Existing Chemical Substances  
**KECL** - Korean Existing and Evaluated Chemical Substances  
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**AICS** - Australian Inventory of Chemical Substances  
**NZIoC** - New Zealand Inventory of Chemicals  
**TCSI** - Taiwan Chemical Substance Inventory  
**NCI** - Vietnam National Chemicals Inventory  
**TECI** - Thailand Inventory FDA Existing Chemicals  
**NSQ** - Mexico National Inventory of Chemical Substances

**US Federal Regulations**

Chemical name	U.S. - TSCA (Toxic Substances Control Act) - Section 5(a)(2) - Chemicals with Significant New Use Rules (SNURs)
Tetrabromobisphenol A,Bis (2,3-dibromopropyl ether) - 21850-44-2	-

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

**SARA 311/312 Hazard Categories**

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications. Under the amended regulations at 40 CFR 370, EPCRA 311/312 Tier II reporting for the 2017 calendar year will need to be consistent with updated hazard classifications.

**CWA (Clean Water Act)**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Tetrabromobisphenol A,Bis (2,3-dibromopropyl ether) 21850-44-2	-	-	-	-

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
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Tetrabromobisphenol A,Bis (2,3-dibromopropyl ether) 21850-44-2	-	-
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**US State Regulations****California Proposition 65**

This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations****US State Regulations**

This product does not contain any substances regulated by state right-to-know regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Tetrabromobisphenol A,Bis (2,3-dibromopropyl ether) - 21850-44-2	-	-	-

**U.S. EPA Label Information**

**EPA Pesticide Registration Number** Not Applicable

**16. Other information**

<b>NFPA</b>	<b>Health hazards</b> 0	<b>Flammability</b> 1	<b>Instability</b> 0	<b>Physical and chemical properties</b> -
<b>HMIS</b>	<b>Health hazards</b> 0	<b>Flammability</b> 1	<b>Physical hazards</b> 0	<b>Personal protection</b> X

**Key or legend to abbreviations and acronyms used in the safety data sheet****Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

**Key literature references and sources for data used to compile the SDS**

Agency for Toxic Substances and Disease Registry (ATSDR)  
 U.S. Environmental Protection Agency ChemView Database  
 European Food Safety Authority (EFSA)  
 European Chemicals Agency  
 EPA (Environmental Protection Agency)  
 Acute Exposure Guideline Level(s) (AELG(s))  
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act  
 U.S. Environmental Protection Agency High Production Volume Chemicals  
 Food Research Journal  
 Hazardous Substance Database  
 International Uniform Chemical Information Database (IUCLID)  
 Japan GHS Classification  
 Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)  
 NIOSH (National Institute for Occupational Safety and Health)  
 National Library of Medicine's ChemID Plus (NLM CIP)  
 National Library of Medicine's PubMed database (NLM PUBMED)  
 National Toxicology Program (NTP)  
 New Zealand's Chemical Classification and Information Database (CCID)  
 Organization for Economic Co-operation and Development Environment, Health, and Safety Publications  
 Organization for Economic Co-operation and Development High Production Volume Chemicals Program  
 Organization for Economic Co-operation and Development Screening Information Data Set  
 World Health Organization

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Revision date 20-Aug-2020

**Revision Note**

The symbol (\*) in the margin of this SDS indicates that this line has been revised.

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End of Safety Data Sheet