



SAFETY DATA SHEET

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

Revision date 16-Dec-2019

Supersedes Date: 12-Apr-2016

Revision Number 9

1. Identification

Product identifier

Product Name F-2200HM

Other means of identification

Product Code(s) 9221

Chemical name Tetrabromobisphenol A diglycidyl ether

Recommended use of the chemical and restrictions on use

Recommended use A flame retardant additive for thermoplastic and thermoset polymers

Restrictions on use No information available

Details of the supplier of the safety data sheet

Supplier Address

ICL-IP America Inc.
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 not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Hazards not otherwise classified (HNOC)

Not Applicable

Label elements

Hazard statements

Not a hazardous substance or mixture according to the Globally Harmonized System (GHS)

Other information

Not Applicable

3. Composition/information on ingredients

Substance

Chemical name	CAS No.	Weight-%
Tetrabromobisphenol A diglycidyl ether	3072-84-2	100

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

Inhalation	Supply fresh air; consult doctor in case of symptoms.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Skin contact	Wash skin with soap and water. In the case of skin irritation or allergic reactions see a physician.
Ingestion	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

Symptoms	No information available.
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Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically and supportively.
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5. Fire-fighting measures

Suitable Extinguishing Media	Material is not combustible. Use extinguishing media appropriate to surrounding fire conditions.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	When heated to decomposition, may release poisonous and corrosive fumes of HBr.
Special protective equipment for fire-fighters	In closed stores, provide fire-fighters with self-contained breathing apparatus in positive pressure mode. Cool containers with water spray.

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

Personal precautions	Wear respirator, chemical safety goggles, rubber gloves and boots.
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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	Ventilate area and wash spill site after material pickup is complete. Sweep up, place in a bag and hold for waste disposal or possible reuse.
Environmental precautions	Prevent product from entering drains, ditches and rivers.
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 Keep containers tightly closed. Avoid bodily contact.
Conditions for safe storage, including any incompatibilities

Storage Conditions Store in a dry, well-ventilated area. Avoid exposure to moisture. away from incompatible materials (see Section 10). Do not store under direct sunlight, even for short periods.

8. Exposure controls/personal protection

Control parameters

Exposure Limits The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Tetrabromobisphenol A diglycidyl ether 3072-84-2	-	-	-

Appropriate engineering controls

Engineering controls Ventilation must be sufficient to maintain TLV-TWA below 3 mg/m³, respirable particles, and 10 mg/m³, inhalable particles (ACGIH recommendation for Particles (Insoluble or poorly soluble) Not Otherwise Specified (PNOS)).

Individual protection measures, such as personal protective equipment

Eye/face protection Chemical safety goggles.
Hand protection Protective gloves
Respiratory protection Approved respirator.
Skin and body protection Body covering clothes and boots.
General hygiene considerations Safety shower and eye bath should be provided.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state Solid
Appearance crystalline Powder
Color White to off-white
Odor Odorless

Property	Values	Remarks • Method
pH	no data available	None known
Melting point / freezing point	no data available	None known
Boiling point / boiling range	no data available	None known
Flash point	> 250 °C / 482 °F	ASTM D93 PMOC
Evaporation rate	Not applicable under standard conditions	None known
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	Not applicable under standard conditions	None known
Vapor density	Not applicable under standard conditions	None known
Relative density	1.9	None known
Water solubility	insoluble	None known
Solubility in other solvents	Soluble in DMF, methyl cellulose, toluene, dimethylacetamide Ethyl benzene: 45.7 g/100g at 25°C Toluene: 123.5 g/100g at 25°C	None known
Partition coefficient	no data available	None known
Autoignition temperature	no data available	None known
Decomposition temperature	326°C	None known
Kinematic viscosity	no data available	None known
Dynamic viscosity	Not Applicable	None known
Other information		
Oxidizing properties	Not available	
Explosive properties	Not available	
Softening point	112°C	
Bulk density	1 g/cc	

10. Stability and reactivity

Reactivity	None known.
Chemical stability	Stable under normal conditions.
Possibility of Hazardous Reactions	Not expected.
Conditions to avoid	Heating above decomposition temperature.
Incompatible materials	Acid anhydride, strong mineral acid, strong bases and oxidizing agents.
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.
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Acute toxicity

Numerical measures of toxicity

Component information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Tetrabromobisphenol A	>2000 mg/kg (Rat)	>2000 mg/kg (Rabbit)	-

diglycidyl ether 3072-84-2			
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Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Not irritant.

Serious eye damage/irritation Not irritant.

Respiratory or skin sensitization Not a skin sensitizer.

Germ cell mutagenicity Not mutagenic by the Ames Test (Salmonella & E. coli).

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

Chemical name	ACGIH	IARC	NTP	US OSHA
Tetrabromobisphenol A diglycidyl ether 3072-84-2	-	-	-	-

Reproductive toxicity Not determined.

STOT - single exposure no data available.

STOT - repeated exposure No information available.

Aspiration hazard Not expected.

12. Ecological information

Ecotoxicity .

Note No effects on aquatic organisms occurred at concentrations up to the substances water solubility.

Component information

Chemical name	Algae/aquatic plants	Fish	Crustacea	Toxicity to microorganisms
Tetrabromobisphenol A diglycidyl ether 3072-84-2	-	-	-	-

Persistence and degradability Not readily biodegradable

Bioaccumulation Not bioaccumulative.

Chemical name	Partition coefficient
Tetrabromobisphenol A diglycidyl ether 3072-84-2	-

Other adverse effects None known.

13. Disposal considerations

Waste treatment methods

Waste from residues/unused products Dispose of in a safe manner in accordance with local/national regulations.

Contaminated packaging Dispose of in a safe manner in accordance with local/national regulations.

14. Transport information

IMDG Not regulated

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not relevant

ICAO/IATA Not regulated

DOT Not regulated

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

TSCA	Listed or exempted
DSL	Not Listed
ENCS	Listed or exempted
IECSC	Listed or exempted
KECL	Listed or exempted
PICCS	Not Listed
AICS	Not Listed
NZIoC	Not Listed
TCSI	Listed or exempted
NCI	Listed or exempted
TECI	Not Listed
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 diglycidyl ether - 3072-84-2	-

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 diglycidyl ether 3072-84-2	-	-	-	-

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
Tetrabromobisphenol A diglycidyl ether 3072-84-2	-	-

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 diglycidyl ether 3072-84-2	-	-	-

U.S. EPA Label Information

EPA Pesticide Registration Number Not Applicable

16. Other information

NFPA	Health hazards 0	Flammability 1	Instability 0	Physical and chemical properties -
HMIS	Health hazards 0	Flammability 1	Physical hazards 0	Personal protection 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) (AEGl(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 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