SAFETY DATA SHEET

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

Revision date 10-Apr-2022 **Supersedes Date:** 29-Jul-2018 **Revision Number** 7

1. Identification

Product identifier

Product Name F-2100H

Other means of identification

Product Code(s) 9616H

Recommended use of the chemical and restrictions on use

Recommended use A polymeric flame retardant additive for thermoplastic resin systems.

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
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
This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

The product contains no substances which at their given concentration, are considered to be hazardous to health.

Appearance Powder

Physical state Solid

Odor No information available

Other information

This product contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent andvery bioaccumulative (vPvB) at concentrations of >= 0.1%.
May form combustible dust concentrations in air

3. Composition/information on ingredients

Substance

Formula (C21H20Br4O4 . C15H12Br4O2) x

Chemical name	CAS No	Weight-%	Trade secret
Tetrabromobisphenol A-polymer with Tetrabromobisphenol A diglycidyl ether	68928-70-1	100	*

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. First-aid measures

Description of first aid measures

Inhalation Remove to fresh air.

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 Rinse mouth
Get medical attention if symptoms occur
NOTE: Never give an unconscious person anything to drink

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically and supportively.

5. Fire-fighting measures

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media None known.

Specific hazards arising from the chemical Dust may form a weak explosive mixture with air (class St1). May emit toxic fumes under fire conditions.

Hazardous combustion products HBr.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Cool containers with water spray. Contain runoff to prevent entry into water or drainage systems.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation. Avoid generation of dust. Use personal protective equipment as required.

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.

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. Avoid breathing dust. Avoid contact with eyes, skin and clothing.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place. Do not store under direct sunlight, even for short periods.

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
Tetrabromobisphenol A-polymer with Tetrabromobisphenol A diglycidyl ether 68928-70-1	-	-	-

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
Skin and body protection	Wear suitable protective clothing.
Respiratory protection	Dust respirator.
General hygiene considerations	Wash hands thoroughly after handling and before eating or smoking. Safety shower and eye bath should be provided. Do not eat, smoke or drink where material is handled, processed or stored.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder
Color	Light straw powder
Odor	No information available
Odor threshold	No information available

Property	**Values**	**Remarks • Method**
pH	No data available	None known
Melting point / freezing point	No data available / °F	
Boiling point / boiling range	No data available	Decomposes
Flash point	> 250 °C / 482 °F	ASTM D93 PMOC
Evaporation rate	No data 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	No data available	
Vapor density	No data available	Not applicable under standard conditions
Relative density	ca. 1.8	
Water solubility	insoluble	
Solubility(ies)	Soluble in polar solvents such as dioxane and DMF	
Partition coefficient	No data available	None known
Autoignition temperature	No data available	Not self-ignitable
Decomposition temperature	>344 °C	
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	

Other information

Explosive properties	No information available
Oxidizing properties	No oxidising properties can be predicted on the basis of chemical structure
Softening point	145-155°C
Molecular weight	22,000-30,000
VOC Content (%)	No information available
Liquid Density	No information available
Bulk density	No information available

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 Acid anhydride, strong mineral acid, strong bases and oxidizing agents.

Hazardous decomposition products Hydrogen bromide.

11. Toxicological information

Information on likely routes of exposure

Product Information The toxicological data presented below are the results of studies conducted on a lower molecular weight oligomer.

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-polymer with Tetrabromobisphenol A diglycidyl ether 68928-70-1	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rat)	-

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

Skin corrosion/irritation Not irritant.

Serious eye damage/eye irritation Not irritant.

Respiratory or skin sensitization Not a skin sensitizer.

Germ cell mutagenicity Not mutagenic in AMES Test
Not clastogenic in chromosome aberration test with Human lymphocytes.

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

Chemical name	ACGIH	IARC	NTP	OSHA
Tetrabromobisphenol A-polymer with Tetrabromobisphenol A diglycidyl ether 68928-70-1	-	-	-	-

Reproductive toxicity No information available.

STOT - single exposure No effects on specific target organs have been identified.

STOT - repeated exposure NOAEL 300 mg/kg bw /day (28 days oral, male rat)
NOAEL 1000 mg/kg bw /day (28 days oral, female rat).

Aspiration hazard Not expected.

Other adverse effects No information available.

12. Ecological information

Note The toxicological data refer to similar product No effects on aquatic organisms occurred at concentrations up to the substances water solubility.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Tetrabromobisphenol A-polymer with Tetrabromobisphenol A diglycidyl ether 68928-70-1	-	-	-	-

Persistence and degradability Not readily biodegradable.

Bioaccumulation Not bioaccumulative.

Chemical name	Partition coefficient
Tetrabromobisphenol A-polymer with Tetrabromobisphenol A diglycidyl ether 68928-70-1	-

Mobility in soil No information available.

Other adverse effects No information available.

13. Disposal considerations

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

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

14. Transport information

DOT Not regulated

TDG Not regulated

MEX Not regulated

IATA Not regulated

IMDG 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
Products that are used as food additives are exempt from listing in international chemical inventories

For further details on the regulatory status for this product in a specific country, please send your inquiry to the following email address: msdsinfo@icl-group.com

Chemical name	TSCA Inventory List Active/Inactive
Tetrabromobisphenol A-polymer with Tetrabromobisphenol A diglycidyl ether 68928-70-1 (100)	Present (ACTIVE)

TSCA	Listed or exempted
DSL	Listed or exempted
ENCS	Listed or exempted
IECSC	Listed or exempted
KECL	Listed or exempted
PICCS	Listed or exempted
AIIC	Listed or exempted
NZIoC	Listed or exempted
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 - Canadian 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
AIIC - Australian Inventory of Industrial Chemicals
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-polymer with Tetrabromobisphenol A diglycidyl ether - 68928-70-1	-

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.

Chemical name	SARA 313 - Threshold Values %
Tetrabromobisphenol A-polymer with Tetrabromobisphenol A diglycidyl ether - 68928-70-1	-

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.

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-polymer with Tetrabromobisphenol A diglycidyl ether 68928-70-1	-	-	-	-

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	Reportable Quantity (RQ)
Tetrabromobisphenol A-polymer with Tetrabromobisphenol A diglycidyl ether 68928-70-1	-	-	

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations
This product does not contain any substances regulated under applicable state right-to-know regulations

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. Other information

NFPA	**Health hazards** 0	**Flammability** 1	**Instability** 0	**Special hazards** -
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)
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)
National Institute of Technology and Evaluation (NITE)
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