SAFETY DATA SHEET

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

Revision date 27-Sep-2019 **Supersedes Date:** 18-Jul-2018 **Revision Number** 8

1. Identification

Product identifier

Product Name PYROGUARD SR-245 FR-245

Other means of identification

Product Code(s) 9309-FR

Chemical name 2,4,6-Tris(2,4,6-tribromophenoxy)-1,3,5-triazine

Recommended use of the chemical and restrictions on use

Recommended use A flame retardant for thermoplastic resins

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
Medical: PROSAR 1-888-875-1685 (24HRS)

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

Other information
Not applicable

3. Composition/information on ingredients

Substance

Chemical name	CAS No.	Weight-%
2,4,6-Tris(2,4,6-tribromophenoxy)-1,3,5-triazine	25713-60-4	99.5

.

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 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.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. Fire-fighting measures

Suitable Extinguishing Media Material is not combustible. Use extinguishing media appropriate to surrounding fire conditions.

Specific hazards arising from the chemical When heated to decomposition, may release poisonous and corrosive fumes of carbon dioxide, carbon monoxide, nitrogen oxides (NOx) and hydrogen bromide. FR-245 dust was tested and was found to be not flammable.

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.

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. Avoid raising dust. Sweep up, place in a bag and hold for waste disposal or possible reuse.

Environmental precautions Prevent entry into sewers and watercourses.

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.

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
2,4,6-Tris(2,4,6-tribromophenoxy)-1,3,5-triazine 25713-60-4	-	-	-

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 Dust 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 White powder
Odor None
Odor threshold Not determined

Property	Values	Remarks • Method
pH	No data available	None known
Melting point / freezing point	228-230°C	None known
Boiling point / boiling range	No data available	None known
Flash point	No data available	None known
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	1.52x10(-20) Pa (25°C)	None known
Vapor density	Not applicable under standard conditions	None known
Relative density	2.44	None known
Water solubility	< 1µg/l (20°C)	None known
Solubility in other solvents	Methylene chloride THF Chloroform n-octanol: 679 mg/l at 20°C	None known
Partition coefficient	No data available	None known
Autoignition temperature	>400	None known
Decomposition temperature	> 360°C	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	Not applicable	None known

Other information

Oxidizing properties The structure indicates non oxidizing properties

Explosive properties Not explosive Does not contain any chemically instable or highly energetic groups that might lead to an explosion.

Particle Size Particle size distribution was between 67% and 51% below 100 micron.

10. Stability and reactivity

Reactivity No reactive hazards known/expected.

Chemical stability Stable under normal conditions.

Possibility of hazardous reactions Not expected to occur.

Conditions to avoid Heating above decomposition temperature.

Incompatible materials None known.

Hazardous decomposition products Hydrogen bromide,carbon dioxide, carbon monoxide and nitrogen oxides.

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
2,4,6-Tris(2,4,6-tribromophenoxy)-1,3,5-triazine 25713-60-4	>2000 mg/kg (Rat)	>2000 mg/kg (Rabbit)	>1.47 mg/L (Rat)

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

Skin corrosion/irritation Not classified as irritating to rabbit skin when tested according to OECD Guideline 404.

Serious eye damage/irritation Not classified as irritating to eyes when tested according to OECD Guideline 405.

Respiratory or skin sensitization Not a skin sensitizer.

Germ cell mutagenicity Not mutagenic in the mouse lymphoma L5178Y test system. Not mutagenic by the Ames Test (Salmonella & E. coli). 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	US OSHA
2,4,6-Tris(2,4,6-tribromophenoxy)-1,3,5-triazine 25713-60-4	-	-	-	-

Reproductive toxicity No evidence of adverse effects to reproductive organs was identified during sub-acute and sub-chronic toxicity testing. Given the lack of toxicity and the low level of absorption of FR-245 into the body, is not expected to have adverse effects on reproduction.

Teratogenicity Not teratogenic, NOAEL=1000 mg/kg body weight (rat, gavage).

STOT - single exposure No effects on specific target organs have been identified during acute toxicity studies.

STOT - repeated exposure Does not meet classification criteria.
NOEL 1000 mg/kg bw/day (4 weeks oral,rat)

Aspiration hazard Not expected to occur.

Other adverse effects Following oral administration to Rats (OECD 417), absorption was very low(=<0.2%).

12. Ecological information

Ecotoxicity .

Note The aquatic toxicity was tested above the solubility level

Component Information

Chemical name	Algae/aquatic plants	Fish	Crustacea	Toxicity to microorganisms
2,4,6-Tris(2,4,6-tribromophenoxy)-1,3,5-triazine 25713-60-4	EC50: >0.013 mg/L (96h, growth inhibition)	LC50: >0.013 mg/L (96h, Carp)	EC50: >0.013 mg/L 48h	Respiration inhibition of activated sewage sludge for 3 hour contact IC50 > 100

				(Not inhibiting).

Persistence and degradability Not readily biodegradable
Not inherently biodegradable.

Bioaccumulation Not bioavailable and will not bioaccumulate.

Chemical name	Partition coefficient
2,4,6-Tris(2,4,6-tribromophenoxy)-1,3,5-triazine 25713-60-4	8.63

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. Treat the solid waste and packaging waste via an incinerator equipped with an adequate gas cleaning system or send to a controlled landfill.

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/NDSL	Listed or exempted
ENCS	Listed or exempted
IECSC	Listed or exempted
KECL	Listed or exempted
PICCS	Not Listed
AICS	Listed or exempted
TCSI	Listed or exempted
NCI	Not Listed
TECI	Not Listed
NSQ	Not Listed

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - 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
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)
2,4,6-Tris(2,4,6-tribromophenoxy)-1,3,5-triazine - 25713-60-4	-

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
2,4,6-Tris(2,4,6-tribromophenoxy)-1,3,5-triazine 25713-60-4	-	-	-	-

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
2,4,6-Tris(2,4,6-tribromophenoxy)-1,3,5-triazine 25713-60-4	-	-

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
2,4,6-Tris(2,4,6-tribromophenoxy)-1,3,5-triazine 25713-60-4	-	-	-

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. Other information

NFPA	**Health hazards** 0	**Flammability** 0	**Instability** 0	**Physical and chemical properties** -
HMIS	**Health hazards** 0	**Flammability** 0	**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
RTECS (Registry of Toxic Effects of Chemical Substances)
World Health Organization

Prepared By

HERA
telephone: +/972-8-6297835
www.icl-group.com
e-mail:msdsinfo@icl-group.com

Revision date 27-Sep-2019

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

Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereof, we make no representations as to the completeness or accuracy thereof. Information is supplied to you upon the condition that the persons receiving the information will make their own determination as to its safety and suitability for their purposes prior to use. In no event will we be responsible for damages of any nature whatsoever resulting from the use of or reliance upon the information. In addition, we shall not be liable for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices or from any hazards inherent in the nature of the product.

End of Safety Data Sheet