

SAFETY DATA SHEET

FR4830

Version 4.0

Revision Date 07/30/2020

Former date 01/02/2019

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : FR4830

Manufacturer or supplier's details

Supplier : Borealis Compounds Inc
176 Thomas Road, NJ 07865 Port Murray, United States of America (USA)
Telephone: +1 908 850 6200

E-mail address : sds@borealisgroup.com

Emergency telephone number : Borealis Compounds Inc, Borealis North America HSE: 908-850-6200 for Monday – Friday 8-4:30pm excluding holidays
+1 215 207 0061 (regional number, NCEC Carechem 24)

Recommended use of the chemical and restrictions on use

Recommended use : Raw material for plastics industry

Restrictions on use : Use only according to our recommendations.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Not a hazardous substance or mixture.

GHS label elements

Not a hazardous substance or mixture.

Other hazards

Inhalation of dust may irritate the respiratory tract.

Prolonged inhalation of high doses of decomposition products may give headache or irritation of the respiratory tract.

The product burns, but is not classified as flammable.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Chemical nature : The product is a polyethylene polymer.

Hazardous components

Chemical name	CAS-No.	Concentration (%)
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SAFETY DATA SHEET

FR4830

Version 4.0

Revision Date 07/30/2020

Former date 01/02/2019

aluminium hydroxide

21645-51-2

≥ 50 - < 70

SECTION 4. FIRST AID MEASURES

- If inhaled : Move to fresh air in case of accidental inhalation of dust or fumes from overheating or combustion.
- In case of skin contact : Cool melted product on skin with plenty of water. Do not remove solidified product.
- In case of eye contact : Rinse with water.
Consult a physician if necessary.
- If swallowed : Rinse mouth with water.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : Inhalation may provoke the following symptoms:
Headache
Irritation
- Notes to physician : No specific instructions needed.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Water in spread jet, dry chemicals, foam or carbon dioxide.
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Principal toxicant in the smoke is carbon monoxide.
- Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
- Special protective equipment for firefighters : Wear self-contained breathing apparatus and protective suit.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation.
Use personal protective equipment.
- Environmental precautions : No specific measures identified.

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FR4830

Version 4.0

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The product is not considered hazardous for the environment.

Methods and materials for containment and cleaning up : Vacuum or sweep up spill.
All spill of material must be removed immediately to prevent slipping accidents.

Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration.
Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).
Non-sparking tools should be used.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Dust from the product gives a potential risk for dust explosion.
Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. All equipment shall be grounded.

Advice on safe handling : During processing and thermal treatment of the product, small amounts of volatile hydrocarbons may be released.
Provide adequate ventilation.
Avoid inhalation of dust and decomposition fumes.

Conditions for safe storage : Safety aspects do not require any special precautions in terms of storage.

Further information on storage stability : Keep in a dry place.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
aluminium hydroxide	21645-51-2	TWA (Respirable particulate matter)	1 mg/m ³ (Aluminium)	ACGIH

However, as the chemical is embedded in a solid polymer, exposure is unlikely, unless the polymer is processed in a way that makes such exposure possible.

Engineering measures : Provide adequate ventilation.
Local exhaust ventilation may be necessary.

SAFETY DATA SHEET

FR4830

Version 4.0

Revision Date 07/30/2020

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It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen deficient environment.

Personal protective equipment

Respiratory protection : In case of insufficient ventilation:
Respirator with combination filter for vapour/particulate

Hand protection
Material : Neoprene gloves

Remarks : Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.

Eye protection : Safety glasses

Skin and body protection : Protective clothing

Hygiene measures : When using do not eat, drink or smoke.
Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : pellets

Colour : off-white

Odour : odourless

pH : No data available

Melting range : 80 - 100 °C

Boiling range : Not applicable

Flash point : Not applicable

Evaporation rate : Not applicable

Flammability (solid, gas) : The product is not flammable.

Upper explosion limit : Not applicable

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SAFETY DATA SHEET

FR4830

Version 4.0

Revision Date 07/30/2020

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Lower explosion limit	: Not applicable
Vapour pressure	: Not applicable
Relative vapour density	: Not applicable
Density	: > 1.3 g/cm ³
Bulk density	: No data available
Solubility(ies)	
Water solubility	: insoluble
Partition coefficient: n-octanol/water	: Not applicable
Auto-ignition temperature	: > 320 °C
Viscosity	
Viscosity, kinematic	: No data available
Oxidizing properties	: The substance or mixture is not classified as oxidizing.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Stable under recommended storage conditions.
Chemical stability	: The product is a stable thermoplastic with no chemical reactivity below 140°C. Above 140°C the intended crosslinking reaction occurs.
Possibility of hazardous reactions	: None known.
Conditions to avoid	: Extremes of temperature and direct sunlight.
Incompatible materials	: Strong oxidizing agents Strong reducing agents Strong acids and strong bases
Hazardous decomposition products	: Under fire conditions: Carbon monoxide During processing and thermal treatment of the product, small amounts of volatile hydrocarbons may be released.

SECTION 11. TOXICOLOGICAL INFORMATION**Acute toxicity**

|| Based on available data, the classification criteria are not met.

Skin corrosion/irritation

|| Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation

|| Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation**Skin sensitisation**

|| Based on available data, the classification criteria are not met.

Respiratory sensitisation

|| Based on available data, the classification criteria are not met.

Germ cell mutagenicity

|| Based on available data, the classification criteria are not met.

Carcinogenicity

|| Based on available data, the classification criteria are not met.

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

|| Based on available data, the classification criteria are not met.

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.

Aspiration toxicity

|| Based on available data, the classification criteria are not met.

Further information**Product:**

Remarks: Inhalation of dust may irritate the respiratory tract. Prolonged inhalation of high doses

SAFETY DATA SHEET

FR4830

Version 4.0

Revision Date 07/30/2020

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of decomposition products may give headache or irritation of the respiratory tract.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish :
Remarks: No data available

Toxicity to daphnia and other :
aquatic invertebrates Remarks: No data available

Persistence and degradability

Product:

Biodegradability : Remarks: Not readily biodegradable.

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Does not accumulate in organisms.

Mobility in soil

Product:

Mobility : Remarks: Not expected to adsorb on soil.

Other adverse effects

Product:

Additional ecological : The product is not considered hazardous for the environment.
information

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : This substance, when discarded or disposed of is not specifically listed as a hazardous waste in Federal regulations. However, it could be hazardous if it is considered toxic, corrosive, ignitable or reactive according to Federal definitions (40 CFR 261). Additionally, it could be designated as hazardous waste if it is mixed with or comes in contact with a hazardous waste. If such contact or mixing may have occurred, check 40 CFR 261 to determine whether it is a

SAFETY DATA SHEET

FR4830

Version 4.0

Revision Date 07/30/2020

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hazardous waste.

The transportation, storage, treatment and disposal of this waste material must be conducted in accordance with all applicable Federal, state and local regulations.

Contaminated packaging : Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

Not regulated as a dangerous good

Special precautions for user

Remarks : Not dangerous goods in the meaning of ADR/RID, ADN, IMDG-Code, ICAO/IATA-DGR

SECTION 15. REGULATORY INFORMATION

In accordance with Hazard Communication Standard 2012 (29 CFR 1910.1200), the product does not need to be classified nor labelled.

Borealis certifies that all chemical substances in this shipment comply with all applicable rules or orders under TSCA and that Borealis is not offering a chemical substance for entry in violation of TSCA or any applicable rule or order under TSCA.

Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, for safe handling.

SAFETY DATA SHEET

FR4830

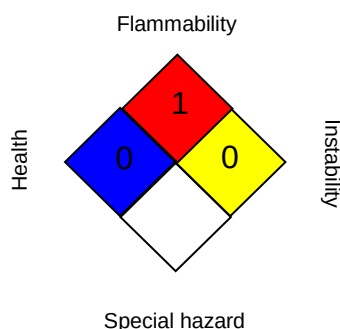
Version 4.0

Revision Date 07/30/2020

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California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

SECTION 16. OTHER INFORMATION**Further information****NFPA:****HMIS® IV:**

HEALTH	/	0
FLAMMABILITY		1
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

Sources of key data used to compile the Safety Data Sheet : Safety data sheets of raw material suppliers.

Revision Date : 07/30/2020

Disclaimer

To the best of our knowledge, the information contained herein is accurate and reliable as of the date of publication; however we do not assume any liability whatsoever for the accuracy and completeness of such information.

BOREALIS MAKES NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION CONTAINED HEREIN. NOTHING HEREIN SHALL CONSTITUTE ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

IT IS THE CUSTOMER'S RESPONSIBILITY TO INSPECT AND TEST OUR PRODUCTS IN ORDER TO SATISFY ITSELF AS TO THE SUITABILITY OF THE PRODUCTS FOR THE CUSTOMER'S PARTICULAR PURPOSE. THE CUSTOMER IS RESPONSIBLE FOR THE APPROPRIATE, SAFE AND LEGAL USE, PROCESSING AND HANDLING OF OUR PRODUCTS.

SAFETY DATA SHEET

FR4830

Version 4.0

Revision Date 07/30/2020

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No liability can be accepted in respect of the use of Borealis' products in conjunction with other materials. The information contained herein relates exclusively to our products when not used in conjunction with any third party materials.