

# SAFETY DATA SHEET

**FR4830**

Version 2

Revision Date 07/29/2015

Print Date 04/06/2016

## 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  
Telephone: +1 908 850 6200E-mail address : [sds@borealisgroup.com](mailto:sds@borealisgroup.com)

Emergency telephone number : Borealis Compounds Inc, William E Wallace: +1 908 850 6243

## SECTION 2. HAZARDS IDENTIFICATION

### Emergency Overview

Appearance	pellets
Colour	natural colour
Odour	odourless
Hazard Summary	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.

### GHS-Classification

Not a hazardous substance or mixture.

### GHS-Labeling

Not a hazardous substance or mixture.

### Potential Health Effects

Aggravated Medical Condition : None known.

Symptoms of Overexposure : Inhalation may provoke the following symptoms:  
Headache  
Irritation

### Carcinogenicity:

**IARC** : None known.  
**ACGIH** : None known.  
**OSHA** : None known.

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**NTP**

None known.

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## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : The product is a polyethylene polymer.  
It contains aluminium hydroxide (EC No 244-492-7, CAS No 21645-51-2)

### Hazardous components

Chemical Name	CAS-No.	Concentration [%]
Peroxide, [1,3(or 1,4)-phenylenebis(1-methylethylidene)]bis[(1,1-dimethylethyl)	25155-25-3	< 2
Aluminum hydroxide	21645-51-2	< 70

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## SECTION 4. FIRST AID MEASURES

General advice : No specific instructions needed.

In case of skin contact : Cool melted product on skin with plenty of water. Do not remove solidified product.

Most important symptoms and effects, both acute and delayed : Inhalation may provoke the following symptoms:  
Headache  
Irritation

Notes to physician : No specific instructions needed.

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## SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Water in spread jet, dry chemicals, foam or carbon dioxide.

Specific hazards during firefighting : Principal toxicant in the smoke is carbon monoxide.

Special protective equipment for firefighters : Wear self-contained breathing apparatus and protective suit.

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## 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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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.

## SECTION 7. HANDLING AND STORAGE

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

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

Materials to avoid : Strong oxidizing agents  
Strong reducing agents  
Strong acids and strong bases

Storage temperature : 10 - 30 °C

Storage period : 12 Months

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Aluminum hydroxide	21645-51-2	TWA (Respirable fraction)	1 mg/m <sup>3</sup>	ACGIH

### Personal protective equipment

Hand protection  
Material : Neoprene gloves

Remarks : The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. 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

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product is used, such as the danger of cuts, abrasion, and the contact time.

- Eye protection : Safety glasses
- Hygiene measures : Provide adequate ventilation.  
Local exhaust ventilation may be necessary.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : pellets
- Colour : natural colour
- 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
- Lower explosion limit : Not applicable
- Vapour pressure : Not applicable
- Relative vapour density : Not applicable
- Density : > 1.3 g/cm<sup>3</sup>
- 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.

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## 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

**Product:**

- Acute oral toxicity : Remarks: No known effect.
- Acute inhalation toxicity : Remarks: No known effect.
- Acute dermal toxicity : Remarks: No known effect.

### Skin corrosion/irritation

**Product:**

Remarks: No known effect.

### Serious eye damage/eye irritation

**Product:**

Remarks: No known effect.

### Respiratory or skin sensitisation

**Product:**

Remarks: No known effect.

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## Germ cell mutagenicity

### Product:

Genotoxicity in vitro : Remarks: no data available

Genotoxicity in vivo : Remarks: no data available

## Carcinogenicity

### Product:

Remarks: Not classified based on available information.

## Reproductive toxicity

### Product:

Effects on fertility : Remarks: No known effect.

## STOT - single exposure

### Product:

Remarks: no data available

## STOT - repeated exposure

### Product:

Remarks: no data available

## Repeated dose toxicity

### Product:

Remarks: Health injuries are not known or expected under normal use.

## Aspiration toxicity

### Product:

no data available

## Further information

### Product:

Remarks: 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., Aluminium hydroxide has a workplace exposure limit in some European countries, but is not classified as hazardous., 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.

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## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Product:

Toxicity to fish : Remarks: no data available

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

Toxicity to algae : Remarks: no data available

Toxicity to bacteria : Remarks: no data available

#### Components:

##### **Peroxide, [1,3(or 1,4)-phenylenebis(1-methylethylidene)]bis[(1,1-dimethylethyl):**

Toxicity to fish : LC50 (Poecilia reticulata (guppy)): 750 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203  
Remarks: No effect up to the limit of solubility.

Toxicity to daphnia and other aquatic invertebrates : (Daphnia magna (Water flea)): Exposure time: 48 h  
Method: OECD Test Guideline 202  
Remarks: No effect up to the limit of solubility.

Toxicity to algae : (Pseudokirchneriella subcapitata (green algae)): Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: No effect up to the limit of solubility.

### Persistence and degradability

#### Product:

Biodegradability : Remarks: Not readily biodegradable.

### Bioaccumulative potential

#### Product:

Bioaccumulation : Remarks: no data available

### Mobility in soil

#### Product:

Mobility : Remarks: Not expected to adsorb on soil.

### Other adverse effects

no data available

#### Product:

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Additional ecological information

: The product is not considered hazardous for the environment., Contains small amounts of a substance classified hazardous for the environment, but the concentration is far below the classification limit.

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## 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 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.

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## SECTION 14. TRANSPORT INFORMATION

### International Regulation

#### 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, ADNR, IMDG-Code, ICAO/IATA-DGR

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## SECTION 15. REGULATORY INFORMATION

All ingredients within this product meet TSCA regulations., In accordance with Hazard Communication Standard 2012 (29 CFR 1910.1200), the product does not need to be classified



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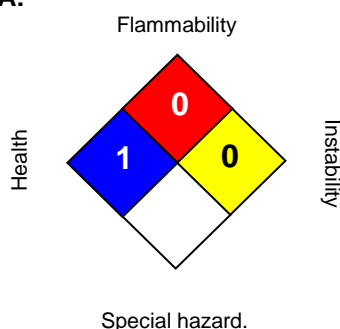
nor labelled.

**OSHA Hazards** : No OSHA Hazards

## SECTION 16. OTHER INFORMATION

### Further information

#### NFPA:



#### HMIS III:

<b>HEALTH</b>	<b>1</b>
<b>FLAMMABILITY</b>	<b>0</b>
<b>PHYSICAL HAZARD</b>	<b>0</b>

0 = not significant, 1 =Slight,  
2 = Moderate, 3 = High  
4 = Extreme, \* = Chronic

Issued according to Regulation (EC) No 1907/2006, Annex II, and its amendments. Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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

### Disclaimer

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