

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758

FR4810

Version 1.0

Revision Date: 28.11.2022

Date of last issue: -
Date of first issue: 28.11.2022

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : FR4810

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Raw material for plastics industry

Recommended restrictions on use : Use only according to our recommendations.

1.3 Details of the supplier of the safety data sheet

: Borealis UK Ltd
One St Peters Square, M2 3DE Manchester, United Kingdom
Telephone: +44 (0) 1625 537390

E-mail address : sds@borealisgroup.com

1.4 Emergency telephone number

+44 (0) 1235 239 670 (NCEC Carechem 24)
In an emergency, call NHS 111 or contact a doctor.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

Skin sensitisation, Category 1 H317: May cause an allergic skin reaction.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758

FR4810

Version 1.0

Revision Date: 28.11.2022

Date of last issue: -
Date of first issue: 28.11.2022

Hazard pictograms

:



Signal word

: Warning

Hazard statements

: H317 May cause an allergic skin reaction.

Precautionary statements

:

Prevention:

P261 Avoid breathing dust.

P272 Contaminated work clothing should not be allowed out of the workplace.

P280 Wear protective gloves.

Response:

P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.

P362 + P364 Take off contaminated clothing and wash it before reuse.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Hazardous components which must be listed on the label:

maleic anhydride

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

The product burns, but is not classified as flammable.

Dust from the product gives a potential risk for dust explosion.

SECTION 3: Composition/information on ingredients

The product is a polyethylene polymer.

3.2 Mixtures

Chemical nature : Raw material for plastics industry

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758

FR4810

Version 1.0

Revision Date: 28.11.2022

Date of last issue: -
Date of first issue: 28.11.2022

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
maleic anhydride	108-31-6 203-571-6 607-096-00-9 UK-20-7333232785-4-0000	Acute Tox. 4; H302 Skin Corr. 1B; H314 Eye Dam. 1; H318 Resp. Sens. 1; H334 Skin Sens. 1A; H317 STOT RE 1; H372 (Respiratory organs) EUH071 specific concentration limit Skin Sens. 1A; H317 ≥ 0,001 %	≥ 0,001 - < 0,1
Substances with a workplace exposure limit :			
carbon black	1333-86-4 215-609-9 01-2119384822-32		≥ 1 - < 10

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

- If inhaled : Move to fresh air.
If symptoms persist, call a physician.
- In case of skin contact : Wash off with soap and plenty of water.
Call a physician if irritation develops or persists.
If molten material comes in contact with the skin, cool with

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758

FR4810

Version 1.0

Revision Date: 28.11.2022

Date of last issue: -
Date of first issue: 28.11.2022

- plenty of water. DO NOT remove solidified product, as removal could result in severe tissue damage.
- In case of eye contact : Flush eyes with water as a precaution.
Get medical attention if irritation develops and persists.
- If swallowed : Rinse mouth with water.
Consult a physician if necessary.

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : 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.
- Skin contact may provoke the following symptoms:
Irritation

- Risks : May cause an allergic skin reaction.

4.3 Indication of any immediate medical attention and special treatment needed

- Treatment : Treat symptomatically.
No specific instructions needed.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media : Water in spread jet, dry chemicals, foam or carbon dioxide.
- Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

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

5.3 Advice for firefighters

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

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758

FR4810

Version 1.0

Revision Date: 28.11.2022

Date of last issue: -
Date of first issue: 28.11.2022

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation.
Use personal protective equipment.

6.2 Environmental precautions

Should not be released into the environment.

It is recommended to implement systems and practices (such as Operation Clean Sweep®) to prevent accidental release of plastics in to the environment.

6.3 Methods and material for containment and cleaning up

Vacuum or sweep up spill.
All spill of material must be removed immediately to prevent slipping accidents.
Recycle or dispose loose material properly.
Do not flush into surface water or sanitary sewer system.

6.4 Reference to other sections

For personal protection see section 8., For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

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.
Avoid contact with skin and eyes.

May cause sensitisation of susceptible persons.
Personnel sensitised to this substance should not be allowed to handle the product.

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

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758

FR4810

Version 1.0

Revision Date: 28.11.2022

Date of last issue: -
Date of first issue: 28.11.2022

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

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Safety aspects do not require any special precautions in terms of storage.

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

7.3 Specific end use(s)

Specific use(s) : Raw material for wire and cable applications.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
carbon black	1333-86-4	TWA	3,5 mg/m3	GB EH40
		STEL	7 mg/m3	GB EH40
maleic anhydride	108-31-6	TWA	1 mg/m3	GB EH40
	Further information: Substances that can cause occupational asthma (also known as asthmagens and respiratory sensitisers) can induce a state of specific airway hyper-responsiveness via an immunological irritant or other mechanism. Once the airways have become hyper-responsive, further exposure to the substance, sometimes even in tiny quantities, may cause respiratory symptoms. These symptoms can range in severity from a runny nose to asthma. Not all workers who are exposed to a sensitiser will become hyper-responsive and it is impossible to identify in advance those who are likely to become hyper-responsive. Substances that can cause occupational asthma should be distinguished from substances which may trigger the symptoms of asthma in people with pre-existing airway hyper-responsiveness, but which do not include the disease themselves. The latter substances are not classified as asthmagens or respiratory sensitisers. Further information can be found in the HSE publication Asthmagen? Critical assessments of the evidence for agents implicated in occupational asthma.			
		STEL	3 mg/m3	GB EH40

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758

FR4810

Version 1.0

Revision Date: 28.11.2022

Date of last issue: -
Date of first issue: 28.11.2022

Further information: Substances that can cause occupational asthma (also known as asthmagens and respiratory sensitisers) can induce a state of specific airway hyper-responsiveness via an immunological irritant or other mechanism. Once the airways have become hyper-responsive, further exposure to the substance, sometimes even in tiny quantities, may cause respiratory symptoms. These symptoms can range in severity from a runny nose to asthma. Not all workers who are exposed to a sensitiser will become hyper-responsive and it is impossible to identify in advance those who are likely to become hyper-responsive. Substances that can cause occupational asthma should be distinguished from substances which may trigger the symptoms of asthma in people with pre-existing airway hyper-responsiveness, but which do not include the disease themselves. The latter substances are not classified as asthmagens or respiratory sensitisers. Further information can be found in the HSE publication Asthmagen? Critical assessments of the evidence for agents implicated in occupational asthma.				
carbon black	1333-86-4	TWA	3,5 mg/m3	GB EH40
		STEL	7 mg/m3	GB EH40

Occupational exposure limits, see chapters 8 and 11.

8.2 Exposure controls

Engineering measures

Provide adequate ventilation.
Local exhaust ventilation may be necessary.

Personal protective equipment

Eye protection : Safety glasses

Use eye protection according to EN 166.

Hand protection

Material : polyvinyl alcohol (PVA, PVAL)
Material : PVC or other plastic material gloves

Remarks : Protective gloves complying with EN 374.
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.

Skin and body protection : Protective clothing

Respiratory protection : In case of insufficient ventilation: Respirator with ABEK-P3

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758

FR4810

Version 1.0

Revision Date: 28.11.2022

Date of last issue: -
Date of first issue: 28.11.2022

filter or self-contained breathing apparatus.

Protective measures : Appropriate personal protective equipment (PPE) shall be worn in accordance with Regulation (EU) 2016/425.

Environmental exposure controls

General advice : Should not be released into the environment.
It is recommended to implement systems and practices (such as Operation Clean Sweep®) to prevent accidental release of plastics in to the environment.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : pellets

Colour : black

Odour : odourless

Odour Threshold : Not applicable

pH : Not applicable insoluble

Melting point/range : 100 - 140 °C

Boiling range : Decomposes on heating.

Flash point : Not applicable, (solid)

Evaporation rate : Not applicable (solid)

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

Upper explosion limit / Upper flammability limit : Not applicable

Lower explosion limit / Lower flammability limit : Not applicable

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758

FR4810

Version 1.0

Revision Date: 28.11.2022

Date of last issue: -
Date of first issue: 28.11.2022

Vapour pressure	: Not applicable (solid)
Density	: > 1,3 g/cm ³
Solubility(ies) Water solubility	: insoluble
Partition coefficient: n-octanol/water	: Not applicable insoluble
Auto-ignition temperature	: > 320 °C
Viscosity Viscosity, dynamic	: No data available
Explosive properties	: Not explosive
Oxidizing properties	: The substance or mixture is not classified as oxidizing.

9.2 Other information

Particle size	: 3 - 10 mm
	Method: Image analysis (surface-based)

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under recommended storage conditions.

10.2 Chemical stability

The product is a stable thermoplastic.

10.3 Possibility of hazardous reactions

Hazardous reactions : None known.

10.4 Conditions to avoid

Conditions to avoid : Extremes of temperature and direct sunlight.

10.5 Incompatible materials

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758

FR4810

Version 1.0

Revision Date: 28.11.2022

Date of last issue: -
Date of first issue: 28.11.2022

Materials to avoid : None known.

10.6 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

11.1 Information on toxicological effects

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.

SECTION 12: Ecological information

12.1 Toxicity

No data available

12.2 Persistence and degradability

Product:

Biodegradability : Remarks: Not readily biodegradable.

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Does not accumulate in organisms.

12.4 Mobility in soil

Product:

Mobility : Remarks: Not expected to adsorb on soil.

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758

FR4810

Version 1.0

Revision Date: 28.11.2022

Date of last issue: -
Date of first issue: 28.11.2022

Remarks: The product is insoluble and sinks in water.

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

12.6 Other adverse effects

Product:

Endocrine disrupting potential : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Additional ecological information : Should not be released into the environment.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Dispose of contents/ container to an approved waste disposal plant.
Check with local regulations.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

14.1 UN number

Not regulated as a dangerous good

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758

FR4810

Version 1.0

Revision Date: 28.11.2022

Date of last issue: -
Date of first issue: 28.11.2022

14.2 UN proper shipping name

Not regulated as a dangerous good

14.3 Transport hazard class(es)

Not regulated as a dangerous good

14.4 Packing group

Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

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

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Relevant EU provisions transposed through retained EU law

15.2 Chemical safety assessment

no

SECTION 16: Other information

Full text of H-Statements

H302	:	Harmful if swallowed.
H314	:	Causes severe skin burns and eye damage.
H317	:	May cause an allergic skin reaction.
H318	:	Causes serious eye damage.
H334	:	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H372	:	Causes damage to organs through prolonged or repeated exposure if inhaled.

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758

FR4810

Version 1.0

Revision Date: 28.11.2022

Date of last issue: -
Date of first issue: 28.11.2022

Full text of other abbreviations

Acute Tox.	: Acute toxicity
Eye Dam.	: Serious eye damage
Resp. Sens.	: Respiratory sensitisation
Skin Corr.	: Skin corrosion
Skin Sens.	: Skin sensitisation
STOT RE	: Specific target organ toxicity - repeated exposure
GB EH40	: UK. EH40 WEL - Workplace Exposure Limits
GB EH40 / TWA	: Long-term exposure limit (8-hour TWA reference period)
GB EH40 / STEL	: Short-term exposure limit (15-minute reference period)

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758

FR4810

Version 1.0

Revision Date: 28.11.2022

Date of last issue: -
Date of first issue: 28.11.2022

Further information

Other information :

Classification of the mixture:

Skin Sens. 1 H317

Classification procedure:

Calculation method

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.

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.