Firebreak 44 Fire Resistant Expanding Foam

SAFETY DATA SHEET

1. Identification of the substance / mixture and of the company

1.1 Product Identifier

Trade name: Firebreak 44 Fire Resistant Expanding PU Foam. One component polyurethane foam with fire and smoke resisting gap and service penetrating capability for internal use.

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

Product use: Polyurethane foam.

1.3 Details of the suppier of the safety data sheet

Company name and address: Neutron Fire Technologies Limited, Broomfield Industrial Estate, Montrose DD10 8SY United Kingdom.

Telephone: +44 (0)1208 871 185

Email address of person responsible for the safety data sheet: sales@neutronfire.com

2. Label elements

2.1 Labelling (REGULATION) (EC) No 1272/2008)

Hazard pictograms:

Signal word: Danger

2.2 Hazards

Hazard statements:

H222	Extremely flammable aerosol.
H229	Pressurised container: May burst if heated.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
H362	May cause harm to breast-fed children.
H373	May cause damage to organs through pro-longed or repeated exposure if inhaled.
H413	May cause long lasting harmful effects to aquatic life.

Precautionary statements:

Prevention:

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211	Do not spray on an open flame or other ignition source.
P251	Do not pierce or burn, even after use.
P260	Do not breathe dust or mist.
P263	Avoid contact during pregnancy and while nursing.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P304 + P340 + P312	IF INHALED Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P342 + P311	If experiencing respiratory symptoms: Call a POISON CENTRE/ doctor.

Storage:

P405	Store locked up.
P410 + P412	Protect from sunlight. Do not expose to temperatures exceeding 50°C

Disposal:

P501	Dispose of contents/container in accordance with local regulation.

Hazardous components which must be listed on the label: Diphenylmethanediisocyanate, isomers and oligomers, alkanes, chloro C14-17.

Additional Labelling: "As from 24 August 2023 adequate training is required before industrial or professional use." Persons already sensitised to di-isocyanates may develop allergic reactions when using this product. Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product. This product should not be used under conditions of poor ventilation unless a protective mask with an appropriate gas filter (i.e. type A1 according to standard EN 14387) is used.

2.3 Other hazards

This substance/mixture contains components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bio-accumulative (vPvB).

Ecological information: 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.

Toxicological information: 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.

Continues on the next page.

3. Composition / information on ingredients

3.1 Mixtures

Components:

Chemical name	CAS no.	EC no.	Registration no.	Classification	Concentration (%)
Reaction products of phosphoryl trichloride and methyloxirane	13674-84-5	237-158-7	01-2119486772-26-XXXX	Acute Tox. 4; H302	>=10 - <20
Diphenylmethanediisocyanate, isomers and oligomers	32055-14-4	500-079-6	01-2119457024-46-XXXX	Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Resp. Sens. 1; H334 Skin Sens. 1; H317 Carc. 2; H351 STOT SE 3; H335 (Respiratory System) STOT SE 2; H 373	>=10 - <20
Chloroalkanes, C14-C17	85535-85-9	287-477-0	01-2119519269-33-XXXX	Lact. H362 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 EUH066	>=1 - <2.5
Substances with an occupational exposure limit					
Dimethyl ether	115-10-6	204-065-8	01-2119472128-37-XXXX	Flam. gas 1; H220	>=10 - <20
Isobutane	75-28-5	200-857-2	01-2119485395-27-XXXX	Flam. gas 1; H220	>=5 - <10
Propane	74-98-6	200-827-9	01-2119486944-21-XXXX	Flam. gas 1; H220	>=1 - <20

For explanation of abbreviations see section 16.

4. First aid measures

4.1 Description of first aid measures

General advice:

- Move out of dangerous area
- Consult a physician
- Show this safety data sheet to the doctor in attendance

If inhaled: Move to fresh air.

In case of skin contact:

- Take off contaminated clothing and shoes immediately
- Wash off with soap and plenty of water
- If symptoms persist, call a physician

In case of eye contact:

- Immediately flush eye(s) with plenty of water
- Remove contact lenses
- Keep eye wide open while rinsing
- If eye irritation persists, consult a specialist

If swallowed:

- Do not induce vomiting without medical advice
- Rinse mouth with water
- Do not give milk or alcoholic beverages
- Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms: Astmatic appearance

- Cough
- Respiratory disorder
- Allergic reactions
- Excessive lachrymation.
- Erythema
- Dermatitis

See Section 11 for more detailed information on health effects and symptoms.

Risks: Irritant effects

- Sensitising effects
- Causes skin irritation
- May cause an allergic skin reaction
- Causes serious eye irritation
- May cause allergy or asthma symptoms or breathing difficulties if inhaled

Continues on the next page.

4. First aid measures *(continued)*

Risks: Irritant effects *(continued)*
- May cause respiratory irritation
- Suspected of causing cancer
- May cause harm to breast-fed children
- May cause damage to organs through prolonged or repeated exposure if inhaled

4.3 Indication of any immediate medical attention and special treatment needed

Treatment:
- Treat sympomatically

5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media:
- Water spray jet
- Dry powder Foam
- Carbon dioxide (CO_2)

Unsuitable extinguishing media:
- High volume water jet

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products:
- Carbon dioxide (CO_2)
- Carbon monoxide
- Nitrogen oxides (NOx)
- Hydrogen cyanide (hydrocyanic acid)
- Chlorine compounds

5.3 Advice for firefighters

Special protective equipment for firefighters:
- In the event of fire, wear self-contained breathing apparatus

Further information:
- Use water spray to cool unopened containers

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions:
- Use personal protective equipment
- Deny access to unprotected persons

6.2 Environmental precautions

Environmental precautions:
- Do not flush into surface water or sanitary sewer system
- If the product contaminates rivers and lakes or drains inform respective authorities

6.3 Methods and materials for cleaning up

6.4 Reference to other sections

For personal protection see section

7. Handling and storage

7.1 Precautions for safe handling

Advice on safe handling:
- Avoid exceeding the given occupational exposure limits (see section 8)
- Do not get in eyes, on skin, or on clothing
- For personal protection see section 8
- Persons with a history of skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used
- Smoking, eating and drinking should be prohibited in the application area.
- Take precautionary measures against static discharge
- Open drum carefully as content may be under pressure
- Follow standard hygiene measures when handling chemical products.

Advice on protection against fire and explosion:
- Keep away from heat/ sparks/ open flames/ hot surfaces
- No smoking
- Do not spray on a naked flame or any incandescent material
- Take precautionary measures against electrostatic discharges

Hygiene measures:
- Handle in accordance with good industrial hygiene and safety practice
- When using do not eat or drink
- When using do not 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:
- BEWARE: Aerosol is pressurized
- Keep away from direct sun exposure and temperatures over 50°C
- Do not open by force or throw into fire even after use
- Do not spray on flames or red-hot objects
- Store in original container
- Keep container tightly closed in a dry and well-ventilated place
- Observe label precautions
- Store in accordance with local regulations

Further information on storage stability:
- No decomposition if stored and applied as directed

7.3 Specific end use(s)

Specific end use(s):
- Cleaning with aprotic polar solvents must be avoided
- Consult most current local product data sheet prior to any use

Continues on the next page.

8. Exposure controls / personal protection

8.1 Control parameters

Occupational exposure limits

Components	CAS No.	Value type (Form of exposure)	Control parameters*	Basis
Dimethyl ether	115-10-6	TWA	1.0 ppm 1.920 mg/m³	2000/39/EC
For further information: Indicative				
Dimethyl ether	115-10-6	TWA	1.0 ppm 1.910 mg/m³	2000/39/EC
Diphenylmethanediisocyanate, isomers and oligomers	32055-14-4	TWA	0.02 mg/m³ (NCO)	2000/39/EC
For further information: Sensitizers; substances marked with an S can lead to very strong allergic reactions. Health & Safety Executive (Occupational Medicine and Hygiene Laboratory)				
Isobutane	75-28-5	TWA	800 ppm 1.900 mg/m³	2000/39/EC
Isobutane	75-28-5	STEL	3.200 ppm 7.200 mg/m³	2000/39/EC
Propane	74-98-6	TWA	1.0 ppm 1.800 g/m³	2000/39/EC
Propane	74-98-6	STEL	4.000 ppm 7.200 mg/m³	2000/39/EC
For further information: National Institute for Occupational Safety and Health				

*The above values are in accordance with the legislation in effect at the date of the release of this safety data sheet.

8.2 Exposure controls

Engineering measures:

- Maintain air concentrations below occupational exposure standards
- Ensure adequate ventilation, especially in confined areas

Personal protective equipment

Eye protection:

- Safety glasses with side-shields conforming to EN166
- Eye wash bottle with pure water

Hand protection:

- Chemical-resistant, impervious gloves complying with an approved standard must be worn at all times when handling chemical products (Reference number EN 374)
- Follow manufacturer specifications

Suitable for short time use or protection against splashes:

- Butyl rubber/nitrile rubber gloves (> 0,1 mm)
- Contaminated gloves should be removed

Suitable for permanent exposure:

- Viton gloves (0.4 mm), breakthrough time >30 min.

Skin and body protection:

- Protective clothing (e.g. safety shoes according to EN ISO 20345, long-sleeved working clothing long trousers)

Respiratory protection:

- In case of inadequate ventilation wear respiratory protection
- Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator
- Organic vapour (Type A) and particulate filter A1: < 1000 ppm; A2: < 5000 ppm; A3: < 10000 ppm. P1: Inert material; P2, P3: hazardous substances
- Ensure adequate ventilation, especially in confined areas
- When workers are facing concentrations above the exposure limit they must use appropriate certified respirators

Environmental exposure controls

General advice:

- Do not flush into surface water or sanitary sewer system
- If the product contaminates rivers and lakes or drains inform local authority

Continues on the next page.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state:
- Aerosol

Colour:
- Various

Boiling point/boiling range:
- No data available

Flammability:
- Extremely flammable aerosol

Flash point:
- Not applicable

Auto-ignition temperature:
- No data available

pH:
- Not applicable
- Substance/mixture reacts with water

Viscosity:
- Kinematic: Not applicable

Vapour pressure:
- 5100 hPa

Density:
- Ca. 1,0 g/cm³ (23 C)

Other information:
- No data available

10. Stability and reactivity

10.1 Information on stability and reactivity

Reactivity:
- No dangerous reaction known under conditions of normal use

Chemical stability:
- No dangerous reaction known under conditions of normal use

Hazardous reactions:
- Stable under recommended storage conditions

Materials to avoid:
- No data available

Hazardous decomposition products:
- No decomposition if stored and applied as directed
- Stable under recommended storage conditions

Conditions to avoid:
- Heat, flames and sparks

Materials to avoid:
- No data available

Hazardous decomposition products:
- No decomposition if stored and applied as directed

11. Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity:
- Not classified based on available information

Components:
- Reaction products of phosphoryl trichloride and methyloxirane

Acute oral toxicity:
- LD50 Oral (Rat): > 630 mg/kg

Acute inhalation toxicity:
- LC50 (Rat): > 7 mg/l

Exposure time:
- 4 hours

Test atmosphere:
- Dust/mist

Acute dermal toxicity:
- LD50 Dermal (Rabbit): > 5.000 mg/kg
- Diphenylmethanedi-isocyanate, isomers and oligomers.

Acute inhalation toxicity:
- LC50: 1,5 mg/l

Exposure time:
- 4 hours

Test atmosphere:
- Dust/mist

Method:
- Expert judgement

Skin corrosion/irritation:
- Causes skin irritation

Components:
- Chloroalkanes, C14-17

Assessment:
- Repeated exposure may cause skin dryness or cracking

Serious eye damage/eye irritation:
- Causes serious eye irritation

Continues on the next page.

11. Toxocological information *(continued)*

Respiratory or skin sensitisation:
- Skin sensitisation
- May cause an allergic skin reaction

Respiratory sensitisation:
- May cause allergy or asthma symptoms or breathing difficulties if inhaled

Germ cell mutagenicity:
- Not classified based on available information

Carcinogenicity:
- Suspected of causing cancer.

Reproductive toxicity:
- May cause harm to breast-fed children

STOT – single exposure:
- May cause respiratory irritation

STOT – repeated exposure:
- May cause damage to organs through prolonged or repeated exposure if inhaled

Aspiration toxicity:
- Not classified based on available information

12. Ecological information

12.1 Toxicity

Product:
- Ecotoxicology Assessment

Chronic aquatic toxicity:
- May cause long lasting harmful effects to aquatic life

Components:
- Reaction products of phosphoryl trichloride and methyloxirane

Toxicity to algae/aquatic plants:
- EC50 Pseudokirchneriella subcapitata (green algae): 82 mg/l

Exposure time:
- 72 hours

Method:
- OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)):
- 13 mg/l

Exposure time:
- 72 hours

Method:
- OECD Test Guideline 201

Toxicity to daphnia and other aquatic invertebrates (chronic toxicity):
- NOEC: 32 mg/l

Exposure time:
- 21 days

Species:
- Daphnia magna (Water flea)

Method:
- OECD Test Guideline 202 chloroalkanes, C14-17

M-Factor (Acute aquatic toxicity):
- 1

M-Factor (Chronic aquatoxicity):
- 10

12.2 Persistence and degradability

Persistence and degradability:
- No data available

12.3 Bioaccumulative potential

Bioaccumulative potential:
- No data available

12.4 Mobility in soil

Mobility in soil:
- No data available

12.5 Results of PBT and vPvB assessment

Product

Assessment:
- This substance/mixture contains components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB)

12.6 Endocrine disrupting properties

Product

Assessment:
- 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

12.7 Other diverse effects

Product

Additional ecological information:
- An environmental hazard cannot be excluded in the event of unprofessional handling or disposal
- May cause long lasting harmful effects to aquatic life

Continues on the next page.

13. Disposal considerations

13.1 Waste treatment methods

Product:

- The generation of waste should be avoided or minimized wherever possible
- Empty containers or liners may retain some product residues
- This material and its container must be disposed of in a safe way
- Dispose of surplus and non-recyclable products via a licensed waste disposal contractor
- Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements
- Avoid dispersal of spilled material

14. Transport information

14.1 UN number

ADR:

- UN 1950

IMDG:

- 2.1

IATA:

- UN 1950

14.2 UN proper shipping name

ADR:

- Aerosols

IMDG:

- Aerosols

IATA:

- Aerosols, flammable

14.3 Transport hazard classes

ADR:

- 2

IMDG:

- 2.1

IATA:

- 2.1

14.4 Packing group

ADR:

Packing group:

- Not assigned by regulation

Classification Code :

- 5F

Labels:

- 2.1

Tunnel restriction code:

- (D)

Remarks:

- Transport according to chapter 3.4 (LQ) possible IMDG

Packing group:

- Not assigned by regulation

Labels:

- 2.1

EmS Code:

- F-D, S-U

IATA (Cargo)

Packing instruction (cargo aircraft):

- 203

Packing instruction (LQ):

- Y203

Packing group:

- Not assigned by regulation

Labels:

- Flammable Gas

IATA (Passenger)

Packing instruction (passenger aircraft):

- 203

Packing instruction (LQ):

- Y203

Packing group:

- Not assigned by regulation

Labels:

- Flammable Gas

14.5 Environmental hazards

ADR – environmentally hazardous:

- No

IMDG – marine pollutant:

- No

IATA (passenger) – environmentally hazardous:

- No

IATA (cargo) – environmentally hazardous:

- No

Continues on the next page.

14. Transport information *(continued)*

14.6 Special precautions for user

- The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this safety data sheet
- Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations

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

- Not applicable for product as supplied

15. Regulatory information

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

REACH – Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII):

- Conditions of restriction for the following entries should be considered
- Diphenylmethanedi-isocyanate, isomers and oligomers (number on list 74)

International Chemical Weapons Convention (CWC) Schedules of Toxic Chemicals and Precursors:

- Not applicable

REACH – Candidate List of Substances of Very High Concern for Authorisation (Article 59):

- Chlroro alkanes, C14-17

REACH – List of substances subject to authorisation (Annex XIV):

- Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer:

- Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast):

- Not applicable

PIC Ordinance, Chem-PICO (814.82):

- Not applicable

REACH Information:

All substances contained in our products are:

- Registered by our upstream suppliers, and/or
- Registered by us, and/or
- Excluded from the regulation, and/or
- Exempted from the registration

Seveso III:

- Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances

P3a FLAMMABLE AEROSOLS

Water hazard class (Germany):

- WGK 2 obviously hazardous to water
- Classification according to AwSV, Annex 1 (5.2)

Volatile organic compounds:

Law on the incentive tax for volatile organic compounds (VOCV)

Volatile organic compounds (VOC) content:

- 20.95% w/w

Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control) Volatile organic compounds (VOC) content:

- 20.95% w/w

Other regulations:

- 75/324/EEC

Article 13 Maternity ordinance (SR 822.111.52):

- Expectant and nursing mothers are only permitted to come into contact with this product during the course of their work if, based on a risk assessment carried out in accordance with Article 63 of Ordinance 1 on the Employment Act (ArGV 1) (SR 822.111), the chemicals in question have been found not to cause any specific harm to mothers or children or if such harm can be ruled out by taking appropriate protective measures
- Young people undergoing basic vocational training may only work with this product if the relevant training ordinance makes provision for them to do so with a view to enabling them to achieve their training objectives and if the preconditions for the training plan have been met and the applicable age restrictions have been complied with
- Young people who are not completing any basic vocational training are not permitted to work with this product. Employees of either sex who are under 18 years old are classed as young people

15.2 Chemical safety assessment

- No Chemical Safety Assessment has been carried out for this mixture by the supplier

16. Other information

16.1 Full text of H statements

Hazard statements:

H220	Extremely flammable gas.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
H362	May cause harm to breast-fed children.
H373	May cause damage to organs through prolonged or repeated exposure if inhaled.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

16.2 Full text of other abbreviations

Acute Tox.	Acute toxicity
Aquatic Acute	Short-term (acute) aquatic hazard
Aquatic Chronic	Long-term (chronic) aquatic hazard
Carc.	Carcinogenicity
Eye Irrit.	Eye irritation
Flam. Gas	Flammable gases
Lact.	Effects on or via lactation
Resp. Sens.	Respiratory sensitisation
Skin Irrit.	Skin irritation
Skin Sens.	Skin sensitisation
STOT RE	Specific target organ toxicity – repeated exposure
STOT SE	Specific target organ toxicity – single exposure
2000/39/EC: Europe	Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS	Chemical Abstracts Service
DNEL	Derived no-effect level
EC50	Half maximal effective concentration
GHS	Globally Harmonized System
IATA	International Air Transport Association
IMDG	International Maritime Code for Dangerous Goods
LD50	Median lethal doses (the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals)
LC50	Median lethal concentration (concentrations of the chemical in air that kills 50% of the test animals during the observation period)
MARPOL	International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978
OEL	Occupational Exposure Limit
PBT	Persistent, bio-accumulative and toxic
PNEC	Predicted no effect concentration
REACH	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency
SVHC	Substances of Very High Concern
vPvB	Very persistent and very bio-accumulative

16.3 Further information

Classification of the mixture:

Classification procedure:

- Aerosol 1 H222, H229 Based on product data or assessment
- Skin Irrit. 2 H315 Calculation method
- Eye Irrit. 2 H319 Calculation method
- Resp. Sens. 1 H334 Calculation method
- Skin Sens. 1 H317 Calculation method
- Carc. 2 H351 Calculation method
- Lact. H362 Calculation method
- STOT SE 3 H335 Calculation method
- STOT RE 2 H373 Calculation method
- Aquatic Chronic 4 H413 Based on product data or assessment

The information contained in this Safety Data Sheet corresponds to our level of knowledge at the time of publication. All warranties are excluded. Our most current General Sales Conditions shall apply.

firebreak® Fire Safety by Design

End of safety data sheet.