MATERIAL SAFETY DATA SHEET

Creation Date 10-Jan-2020 **Revision Date** 10-March--2024 **Version 4**

0. General Information

This Safe Use Instruction Sheet is the document provided by Basalt Technologies UK Limited to communicate recommended safe handling and use instruction for articles not regulated by the European Regulation (ER) on Chemicals No 1907/2006 (REACH)

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Basalt Fibre Reinforced Polymer (BFRP) Rebar
Synonyms	Bastech® Rebar, Bastech® BFRP Rebar, Basalt FRP Rebar, Basalt Rebar
Recommended Use	Industrial and professional use: reinforcement of structures of cement, concrete and others mineral matrix; reinforcement of resins in corrosive medium
Supplier Address	Basalt Technologies UK Limited Unit 1 Lancaster Business Park, Cublington Road, Wing Buckinghamshire LU7 0LA, United Kingdom
Company Phone Number	+44789551966
E-mail address	info@basalt-frp.co.uk
Company Website	www.basalt.tech

2. HAZARDS IDENTIFICATION

Regulatory Status

This product is not classified as hazardous according to the European Regulation N° 1272/2008 (CLP)
BFRP Rebar products are articles.
Products which meet the definition of Articles according to Art. 3(3) – Definitions - of the Regulation (EC) No. 1907/2006 (REACH) (an object which during production is given a special shape, surface or design, which determines its function to a greater degree than its chemical composition) are not regulated by Regulation (EC) No. 1272/2008 (CLP)

Other Information

May cause skin abrasion in case of direct manual handling.
When being cut or grinded these products may release dust (Particles Not Otherwise Regulated). See Section 8 for Exposure Limit Data.

3. COMPOSITION/INFORMATION ON INGREDIENTS

BFRP Rebars are made of ca. 70 - 80% (w/w) of Continuous Filament Basalt Fibres and ca. 20 - 30% (w/w) of cured thermoset resin. They are available in the form of cylindric rebars, of several nominal diameters and lengths. Continuous Filament Basalt Fibres may be considered as a specific type of Continuous Filament glass fibre with particular composition of oxides, thus CAS number for basalt fibre is the same as for glass fibre: 65997-17-3 (Fibre glass wool, GLASS fibre; GLASS WOOL; LIME GLASS; fibreglass; fibreglass; GLASS BEADS; GLASS BALLS; Glass Fibre; GLASS POWDER).

4. FIRST AID MEASURES

Description of First Aid Measures

Eye contact

- DO NOT rub or scratch eyes
- Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes
- If eye irritation persists: Get medical advice/attention

Skin contact	• DO NOT rub or scratch affected area • Wash off immediately with soap and plenty of cold water • If skin irritation persists, call a physician
Inhalation	• Inhalation of this product is unlikely
Ingestion	• Rinse mouth with water and drink water to remove fibres from the throat • If symptoms persist, call a physician

5. FIRE-FIGHTING MEASURES

Flammable properties

• Only the hardened thermoset resin is combustible and could release small quantities of hazardous gas in case of major and prolonged heat or fire. Basalt fibres are not flammable, are incombustible and do not support combustion. Avoid exposing the product to open flames.

Suitable extinguishing media

• Use CO2, dry chemical, or foam
• Water spray or fog

Protective equipment and precautions for firefighters

• As in any fire, wear self-contained breathing apparatus (SCBA) and full fire-fighting protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	• Accidental release of this product is unlikely
Methods for cleaning up	• Accidental release of this product is unlikely

7. HANDLING AND STORAGE

Precautions for safe handling

• Prevent and/or minimize dust formation
• Wear appropriate personal protective equipment in case of direct contact with the product

Storage Conditions

• Do not store Basalt FRP Rebars directly on ground. Place timber pallets under bars to keep them free from dirt & mud and to provide easy handling. Store Basalt FRP Rebars under covers to avoid direct sunlight & other chemical substances contact.
• Keep away from open flames and other ignition sources.

Incompatible materials

• None known

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

There is no Occupational Exposure Limit directly associated with Basalt FRP Rebars, except airborne nuisance dust which may occur under certain process conditions (e.g. cutting and grinding)

Chemical name	ACGIH	Austria	Belgium	Bulgaria	Croatia
Continuous filament glass fibre, non-respirable -	Resp. dust 3 mg/m^3 Total dust 10 mg/m^3 Resp. fibre 1 fibre/ml	Resp. dust 5 mg/m^3 Total dust 5 mg/m^3 Resp. fibre 0,5 fibre/ml	Resp. dust 3 mg/m^3 Total dust 10 mg/m^3 Resp. fibre 1 fibre/ml		
Silica-crystaliline, quartz 14808-60-7		TWA: 0.15 mg/m^3	0.1 mg/m^3 TWA (alveolar dust)		TWA: 0.1 mg/m^3
Chemical name	**Czech Republic**	**Denmark**	**Finland**	**France**	**Germany**
Continuous filament glass fibre, non-respirable -		Resp. dust 5 mg/m^3 Total dust 10 mg/m^3 Resp. fibre 0,1 fibre/ml	Total dust 10 mg/m^3 Resp. fibre 1 fibre/ml	Resp. dust 5 mg/m^3 Total dust 10 mg/m^3 Resp. fibre 1 fibre/ml	Resp. dust 1,25 mg/m^3 Total dust 10 mg/m^3
Silica-crystaliline, quartz 14808-60-7	TWA: 0.1 mg/m^3	TWA: 0.3 mg/m^3 TWA: 0.1 mg/m^3	TWA: 0.05 mg/m^3	TWA: 0.1 mg/m^3	
Chemical name	**Hungary**	**Ireland**	**Italy**	**Lithuania**	**Netherlands**

Continuous filament glass fibre, non-respirable -		Resp. dust 4 mg/m³ Total dust 10 mg/m³ Resp. fibre 1 fibre/ml	Resp. dust 3 mg/m³ Total dust 10 mg/m³ Resp. fibre 1 fibre/ml		Resp. dust 3 mg/m³ Total dust 10 mg/m³ Resp. fibre 0,5 fibre/ml
Silica-crystaliline, quartz 14808-60-7	TWA: 0.1 mg/m³	TWA: 0.1 mg/m³ STEL: 0.3 mg/m³		TWA: 0.1 mg/m³	TWA: 0.075 mg/m³

Chemical name	Norway	Poland	Portugal	Russia	Spain
Continuous filament glass fibre, non-respirable -	Resp. dust 5 mg/m³ Total dust 10 mg/m³ Resp. fibre 1 fibre/ml		Resp. dust 3 mg/m³ Total dust 10 mg/m³ Resp. fibre 1 fibre/ml		Resp. dust 3 mg/m³ Total dust 10 mg/m³ Resp. fibre 1 fibre/ml
Silica-crystaliline, quartz 14808-60-7	TWA: 0.3 mg/m³ TWA: 0.1 mg/m³ STEL: 0.9 mg/m³ STEL: 0.3 mg/m³	TWA: 0.1 mg/m³	TWA: 0.025 mg/m³	TWA: 1 mg/m³ STEL: 3 mg/m³	TWA: 0.05 mg/m³

Chemical name	Sweden	Switzerland	United Kingdom
Continuous filament glass fibre, non-respirable -	Resp. dust 5 mg/m³ Total dust 10 mg/m³ Resp. fibre 1 fibre/ml	Resp. dust 3 mg/m³ Total dust 10 mg/m³ Resp. fibre 0,5 fibre/ml	Resp. dust 4 mg/m³ Total dust 10 mg/m³ Resp. fibre 2 fibre/ml
Silica-crystaliline, quartz 14808-60-7	TLV: 0.1 mg/m³	TWA: 0.15 mg/m³	

Engineering Controls If and when cutting or grinding Basalt FRP Rebars in confined spaces provide local exhaust and/or general ventilation to maintain exposure below applicable occupational exposure limits

Eye/face protection
- Avoid contact with eyes
- Personal Protective Equipment usually used on Construction jobsite are appropriate

Skin and body protection
- Avoid contact with skin
- Wear protective gloves
- Personal Protective Equipment usually used on Construction jobsite are appropriate

Respiratory protection
- If and when cutting or grinding Basalt FRP Rebars in confined spaces provide local exhaust and/or general ventilation to maintain exposure below applicable occupational exposure limits

General Hygiene Considerations
- Wash hands before breaks and immediately after handling products

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Solid
Appearance	In the form of cylindrical bars, of various diameters (4 mm to 32 mm) with helical rib wind;
Odour	Odourless
Colour	Off-black
Water solubility	Insoluble in water
Density	ca. 2.1 (H2O = 1)
Explosive properties	Not an explosive
Decomposition temperature	The hardened thermoset resin starts to decompose at about 200°C

10. STABILITY AND REACTIVITY

Stability
- Stable under normal conditions
- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

Possibility of Hazardous Reactions
- None under normal processing conditions

Hazardous Decomposition Products
- None under normal use conditions
- Small quantities of undetermined hazardous decomposition products may be released in case of heat exposure or during a fire

11. TOXICOLOGICAL INFORMATION

Product Information	Under normal conditions of use no health effect is anticipated.
Components Information	Dusts and fibres may cause temporary skin and mucous membranes itching due to mechanical abrasion effect of fibres. Mechanical abrasion is not considered as a health hazard in the meaning of the UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS). Inhalation may cause coughing, nose and throat irritation and sneezing. High exposures may cause difficult breathing, congestion and chest tightness Continuous filament basalt fibres are not respirable according to the World Health Organization (WHO) definition. Respirable fibres have a diameter (d) smaller than 3µm, a length (l) larger than 5µm and a l/d-ratio larger than or equal to 3. Fibres with diameters greater than 3 microns, which is the case for continuous filament basalt fibre, do not reach the lower respiratory tract and, therefore have no possibility of causing serious pulmonary disease. Continuous filament basalt fibres do not possess cleavage planes which would allow them to split length-wise into fibres with smaller diameters, rather they break across the fibre, resulting in fibres which are of the same diameter as the original fibre with a shorter length and a small amount of dust. Microscopic examination of dust from highly chopped and pulverised basalt demonstrated the presence of small amounts of respirable dust particles. Among these respirable particles, some were fibre-like in terms of l/d ratio (so-called “shards”). It can be clearly observed however that they are not regular shaped fibres but irregular shaped particles with fibre-like dimensions. To the best of our knowledge, the exposure levels of these fibre-like dust particles measured at our manufacturing plants are of the order of magnitude between 50 to 1000 below existing applicable limits
ACGIH (American Conference of Governmental Industrial Hygienists)	Continuous filament basalt fibres are classified as A4 - Not Classifiable as a Human Carcinogen
IARC (International Agency for Research on Cancer)	The International Agency for Research on Cancer (IARC) in June, 1987, and in October, 2001 (see IARC Monographs on the Evaluation of Carcinogenic risks to humans – Man-made Vitreous Fibres – Volume 81), categorized continuous filament fibre basalt as not classifiable with respect to human carcinogenicity (Group 3). The evidence from human as well as animal studies was evaluated by IARC as insufficient to classify continuous filament basalt fibre as a confirmed, probable or even possible cancer-causing material
NTP (National Toxicology Program)	Continuous filament basalt fibres are not listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition)
OSHA (Occupational Safety and Health Administration of the US Department of Labor)	X - Present
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Continuous filament basalt fibres are not listed in the Table of harmonized classification entries in Annex VI to CLP Regulation. Mechanical abrasion is not considered as a health hazard in the meaning of European Regulation 1272/2008 (CLP).

12. ECOLOGICAL INFORMATION

This product is not expected to be hazardous for the environment

13. DISPOSAL CONSIDERATIONS

Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

These products are not classified as dangerous goods according to international transport regulations

15. REGULATORY INFORMATION

International Inventories These products are articles. Articles are exempted from registration or listing under chemicals inventories like TSCA (USA), DSL/NDSL (CAN), REACH (EU), ENCS (JP), IECSC (CN), KECL (KR), PICCS (PH), AICS (AUS), TCSI (Taiwan)

16. OTHER INFORMATION

Prepared By	Bastech
Creation Date	10-Jan-2020
Revision Date	10-Mar-2024
Revision Note	New document

Disclaimer

Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use