

Fasloc® Resin Cartridges

Fasloc® Resin Cartridges consist of a two compartment heat sealed tube of polyester film clipped at both ends. One compartment contains a dark grey or yellow resin mastic, the other an off-white or coloured catalyst.



The Fasloc® resin compound is thixotropic and fast setting. This reduces viscosity during insertion and permits relatively low force and torque. The uniquely sized graded fillers assist with shredding the film, mixing the resin and, by interlocking with each other and the sidewalls of the hole, further reduce strata movement. The results are fast installation, rapid achievement of full strength, and minimum tendency for ungelled resin to drop from the holes during installation.

Product Range

- Standard products available in sizes from 23mm to 35mm diameter, and in lengths to suit the application
- Set times from 15 seconds to 10 minutes (at 20°C)
- High strength products available for specific applications
- Dual set time cartridges
- Spin-to-stall cartridges
- Non-standard products are available on specific request (subject to pre-testing prior to supply).

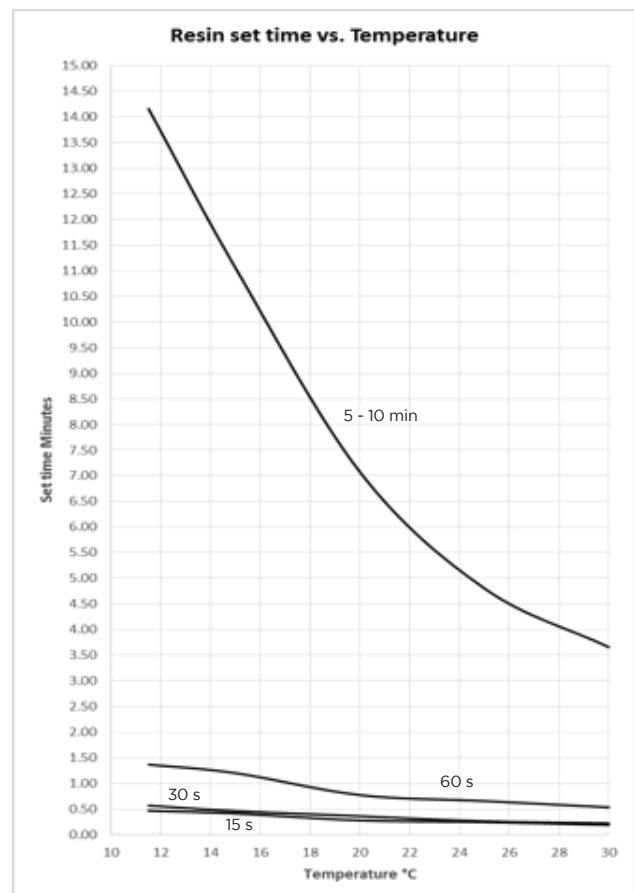
Set Times

A wide range of set times is offered for varied conditions. Cartridges are colour coded.

Colour	Set time @ 20°C	Mixing Time
Purple	15 sec	8 sec
Red	30 sec	10 sec
Green	60 sec	15 sec
Blue	120 sec	20 sec
Yellow	5 - 10 min	20 sec

Please note that mix times as indicated above are for mechanised installations. These may vary with jackhammer and other installations.

Set times will vary with the temperature of Fasloc® resin cartridges as indicated in the graph.



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Strengths

The performance of resin in the field depends on the design strength of the resin “mix”. Shear strength specifications are minimum 19 MPa for standard Fasloc® and 23 MPa for Fasloc®A.

Note that the effectiveness of a resin bolt system depends on many factors such as:

- Type of tendon used
- Ratio of hole diameter to tendon diameter
- Capsule diameter and length
- Length of hole and encapsulation length
- Over-drill in hole length.

Quality Control

The superior quality of the Fasloc® bolt support system is assured through a three-part quality control program.

- Ingredient testing
- In-process control tests
- Finished product acceptance tests.

Storage

- For maximum shelf life Fasloc® cartridges should be stored away from direct sunlight in a reasonably cool, well ventilated, dry area
- Storage life is six months at 20°C
- Under adverse storage conditions, shelf life is reduced
- To ensure proper storage, the product should not be subject to temperatures in excess of 30°C for prolonged periods
- Storage is recommended under cover with adequate ventilation. Conversely, while cold storage does not adversely affect the shelf life of Fasloc®, it should be warmed to a range of 10° - 15°C before using to assure set times within the specified range
- It is essential that stocks be rotated so that the oldest stock is first out. Shelf life is 4 - 6 months.



Handling Precautions

Do not open or puncture cartridge. Physical contact with liquid contained in cartridge may cause mild irritation. Safety glasses or eye shield should always be used when roof bolting is done. In case of contact with eyes, immediately flush with plenty of water for at least 15 minutes. Call a doctor.

In case of skin contact, flush skin with water. Prolonged contact with skin may cause mild irritation. Irritation should subside when material is removed.

Cartridges are filled with inert fillers, water, polyester resin and catalyst (active ingredients include low levels of styrene and modified benzoyl peroxide). Fasloc® resin cartridges are for industrial use only and are intended for use in conjunction with bolts.

MATERIAL SAFETY DATA SHEET

- FASLOC® RESIN CAPSULES

SECTION 1: IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product Name	Fasloc® Resin Capsules
Synonyms	Fasloc® Resin Cartridges, Fasloc® Dual Speed Capsules, Fasloc® Spin to Stall Resin Capsules

1.2 Uses and uses advised against

Application	Resin based Anchor System for roof support in mining
Compliance	Manufactured to the requirements of SANS 1534:2018 "Resin Capsules for use with tendon based support systems".

1.3 Details of the supplier of the product

Company	ROCBOLT Technologies (Pty) Ltd
Address	30 North Reef Road, Gremiston, 1429
Telephone	+27 (0)11 878 6800
Fax	+27 (0)11 878 6811
Website	www.rocbolt.com

1.4 Emergency telephone numbers

Emergency Telephone (o/h)	+27 (0)11 878 6800
Emergency Telephone (a/h)	+27 (0)76 891 2707 (06:00-22:00 GMT+2)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Health Hazards

Skin Irritation:	Category 2
Eye Irritation:	Category 2A
Toxic to Reproduction:	Category 2
Specific Target Organ Toxicity (Repeated Exposure):	Category 2

2.2 GHS label elements

Signal Word

WARNING

Pictograms



Hazard Statements

H315	Causes skin irritation
H319	Causes serious eye irritation
H361	Suspected of damaging fertility or the unborn child
H373	May cause damage to organs through prolonged or repeated exposure

Prevention Statements

P201	Obtain special instructions before use
P202	Do not handle until all safety precautions have been read and understood
P260	Do not breathe dust/fume/gas/mist/vapours/spray
P264	Wash hands thoroughly after handling
P280	Wear protective gloves/protective clothing/eye protection/face protection

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Response Statements:

P302 + P352

P305 + P351 + P338

P308 + P313

P321

P362

IF ON SKIN: Wash with plenty of soap and water

IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing

IF exposed or concerned: Get medical advice/attention

Specific treatment is advised - see first aid instructions

Take off contaminated clothing and wash before re-use

Disposal Statements:

P501

Dispose of contents/container in accordance with relevant regulations

2.3 Other hazards

The materials contained in this product may only represent a hazard if the integrity of the packaging is compromised. If the capsule packaging compromised (e.g. leaks/splits), the product may cause an allergic skin reaction, skin irritation and severe eye irritation if in contact with the substance.

The product is flammable, although the risk of ignition is very low.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Product description

Resin and catalyst mastic containing inert fillers, separated, sealed and contained in a translucent plastic film.

Components	CAS Number	%WW
Polyester Resin	39459-88-6	<25%
Styrene	100-42-5	<10%
Other Material		Up to 100%

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Eye Contact

If in eyes, hold eyelids apart and flush continuously with running water. Flush for at least 15 minutes and seek medical attention.

Inhalation

If inhaled, remove from contaminated area. To protect rescuer, use self-contained breathing apparatus. Apply artificial respiration if not breathing.

Skin Contact

If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water and soap/suitable cleanser. Seek medical attention if irritation persists or symptoms of exposure develop.

Ingestion

If swallowed, do not induce vomiting. Wash mouth with water. Obtain medical attention. Beware of aspiration should vomiting occur. ingestion is considered unlikely due to product form.

4.2 Most important symptoms and effects, both acute and delayed

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

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

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SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Dry agent, carbon dioxide or foam. Prevent contamination of drains and waterways.

5.2 Special hazards arising from the substance or mixture

Comustible paste. May evolve toxic gasses (carbon dioxides, styrene, hydrocarbons) when heated to decomposition. Styrene may polymerise readily at elevated temperatures and may violently rupture sealed containers.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved when heated. Wear full protective equipment including self-contained breathing apparatus (SCBA) when combatting fire. Use water spray to cool nearby containers and water fog for nearby storage areas.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in Section 8 of the SDS. Ventilate area where possible.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then cover/absorb spill with non-combustible absorbent material (vermiculite, sand or similar), collect and place in suitable containers for disposal. Eliminate all sources of ignition.

6.4 Reference to other sections

See Section 8 and 13 for exposure controls and disposal.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use, carefully read the product label and markings. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage

Store in a cool, dry well ventilated area, removed from heat or ignition sources and foodstuffs. Ensure containers are adequately labeled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills. Large storage areas should have appropriate ventilation and fire protection systems. Underground storage should be in return airway. For maximum quality, store at temperatures close to or just under 20°C.

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- FASLOC[®] RESIN CAPSULES

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Controls

Use only in well ventilated areas.

8.2 Personal protection

In case of poor ventilation, wear suitable respiratory equipment. The use of impervious gloves, safety glasses and overalls are recommended.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Info on basic physical and chemical properties

Physical State:	PASTE
Colour:	BLACK/YELLOW PASTE WITH OFF-WHITE OR COLOURED CATALYST
Boiling Point:	145 DEGREES CELSIUS
Flash Point:	> 30 DEGREES CELSIUS (CLOSED UP)
Relative Density:	2.0 AT 20 DEGREES CELSIUS
Water Solubility:	INSOLUBLE

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in Sections 10.2 to 10.6.

10.2 Chemical stability

Stable under normal recommended conditions of storage and use.

10.3 Possibility of hazardous reactions

Polymerises with the evolution of heat. Can enhance combustion of other materials.

10.4 Conditions to avoid

Do not mix with other chemicals or store in direct sunlight and extreme temperatures. Keep away from ignition sources and open flames.

10.5 Incompatible materials

Oxidising agents, strong acids, strong alkalis and accelerators.

10.6 Hazardous decomposition products

May evolve toxic gasses when heated to decomposition.

MATERIAL SAFETY DATA SHEET

- FASLOC® RESIN CAPSULES

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute Toxicity: Due to the product form (enclosed), contact with contents is not anticipated with normal use.

11.2 information available for the ingredients

Styrene: LD50 oral > 5000mg/kg (rat), skin > 2000mg/kg (rat), inhalation 11.8mg/L/4 hours (rat).

Benzoyl Peroxide: LD50 oral 5700mg/kg (mouse), skin > 1000mg/kg (mammal).

Skin	Due to product encapsulation, the potential for skin contact is reduced. If the container is damaged, contact may result in irritation, redness, pain, rash, dermatitis and possible burns. Effects may be delayed.
Eye	Due to product encapsulation, the potential for eye contact with contents is reduced. If the container is damaged or splatter occurs, direct contact may result in irritation, lacrimation and burns.
Sensitisation	Exposure to contents may cause skin sensitisation. This product is not classified as a respiratory sensitiser.
Carcinogenicity	Due to the product encapsulation, exposure to contents is not anticipated with normal use. Styrene is classified as possibly carcinogenic to humans.
Reproductive Toxicity	Due to the product encapsulation, exposure to contents is not anticipated with normal use. Styrene is suspected of damaging fertility or the unborn child.
Aspiration	Not classified as causing aspiration.
STOT - Single Exposure	Over exposure may result in irritation of the nose and throat, coughing, nausea, vomiting, dizziness and breathing difficulties.
STOT - Repeated Exposure	Due to product encapsulation, the potential for exposure to the contents is reduced. May cause damage to organs (nasal epithelial and ear) through prolonged or repeated exposure to styrene if inhaled.
Mutagenicity	Insufficient data available to classify as a mutagen.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Harmful to aquatic organisms, avoid contaminating waterways.

Styrene	LC50: 4.02 mg/l, Exposure time: 96h, Species: Pimephales promelas (Fathead Minnow), flow-through test.
	EC50: 4.7 mg/l, Exposure time: 48h, Species: Daphnia magna (Water Flea), flow-through test.
	EC50: 4.9 mg/l, Exposure time: 72h, Species: Selenastrum capricornutum (Algae).

MATERIAL SAFETY DATA SHEET

- FASLOC® RESIN CAPSULES

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste Disposal Dispose of in compliance of national legislation and local bylaws.
Use of a registered waste disposal company is advised.

SECTION 14: TRANSPORT INFORMATION

No special transport arrangements are required.

SECTION 15: REGULATORY INFORMATION

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

EC Directives Dangerous substances directive 67/548/EEC.
Dangerous preparations directive 88/379/EEC.

Statutory Instruments OHS Act No 85 of 1993 and Regulations.
Mine Health and Safety Act No 29 of 1996 and Regulations.
Hazardous Substances Act, 1973 (Act No. 107 of 1998).
SANS 10234:2008 Globally Harmonised System of Classification and Labelling of Chemicals (GHS).

SECTION 16: OTHER INFORMATION

Additional Information

The data and advice given in this document apply when the product is used for the stated purpose or application. The product is not suitable for any other application, and use of this product for any other application may give rise to risks not covered in this document. If in doubt as to the intended application, or use in other applications is considered, the advice of ROCBOLT Technologies (Pty) Ltd should first be sought.

If the product has been purchased for supply to a third party, it is the purchaser's duty to ensure that any person handling or using the product is provided with the information in this document.

It is the responsibility and duty of the employer to inform employees (or others who may be affected) of the hazards described in this document and the precautions that should be taken.

This document does not constitute or substitute for the users own assessment of workplace risk as required by other health and safety legislation.

Prepared By: ROCBOLT Technologies (Pty) Ltd
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Revision Summary: Alignment with SANS 10234:2008 (GHS) requirements.