



SAFETY DATA SHEET TAMCRETE MFC

According to NOHSC: 2011 (2003)

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

PRODUCT NAME	TAMCRETE MFC
APPLICATION	Sealer
SUPPLIER	TAM International Australia PTY Ltd 20 Pedder Crescent Regency Park South Australia 5010 Australia +61 8 8340 4166 +61 8 8340 4121 tam@taminternational.com

2 HAZARDS IDENTIFICATION

Risk of serious damage to eyes.

Avoid contact with eyes. Wear eye/face protection. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Contains chromium (VI). May produce an allergic reaction.

CLASSIFICATION Xi;R41.

HUMAN HEALTH

Hazardous according to criteria of NOHSC

3 COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC No.	CAS-No.	Content	Classification
OPC CEMENT	266-043-4	65997-15-1	>60%	Xi;R41.

The Full Text for all R-Phrases are Displayed in Section 16

4 FIRST-AID MEASURES

INHALATION

Move the exposed person to fresh air at once. Rinse nose and mouth with water. Get medical attention if any discomfort continues.

INGESTION

Do not induce vomiting. Immediately rinse mouth and drink plenty of water (200-300 ml). Get medical attention.

SKIN CONTACT

Remove contaminated clothing immediately and wash skin with soap and water. Contact physician if irritation continues or sores develop.

EYE CONTACT

Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes and get medical attention. May cause permanent damage if eye is not immediately irrigated.

5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA

Use fire-extinguishing media appropriate for surrounding materials.

SPECIAL FIRE FIGHTING PROCEDURES

Keep run-off water out of sewers and water sources. Dike for water control.

PROTECTIVE MEASURES IN FIRE

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6 ACCIDENTAL RELEASE MEASURES

TAMCRETE MFC**PERSONAL PRECAUTIONS**

Wear protective clothing as described in Section 8 of this safety data sheet. Avoid inhalation of dust. In case of inadequate ventilation, use respiratory protection.

ENVIRONMENTAL PRECAUTIONS

Avoid discharge to the aquatic environment.

SPILL CLEAN UP METHODS

Collect spillage with shovel, broom or the like and reuse, if possible. Avoid generation and spreading of dust. Containers with collected spillage must be properly labelled with correct contents and hazard symbol.

7 HANDLING AND STORAGE**USAGE PRECAUTIONS**

Read and follow manufacturer's recommendations. Avoid contact with skin and eyes. Avoid handling which leads to dust formation.

STORAGE PRECAUTIONS

Store in tightly closed original container in a dry and cool place. From 17 January, those cements which naturally contain more than 2ppm of soluble hexavalent chromium (chromium VI) by dry weight of cement, will be treated with a chemical reducing agent (such as ferrous sulfate) that maintains the level of hexavalent chromium in the cement to below 2ppm by dry weight of cement. The effectiveness of the reducing agent reduced with time, therefore cement bags and/or delivery documents will contain information on the period of time (shelf life) for which the manufacturer has established that the reducing agent will continue to limit the level of hexavalent chromium to less than 2 ppm by dry weight of cement.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Name	Std	TWA - 8 hrs		STEL - 15 min		Notes
OPC CEMENT	NOHSC		5 mg/m3			

NOHSC = The National Occupational Health and Safety Commission.

INGREDIENT COMMENTS

TWA exposure limit from NOHSC:1003(1995)

RESPIRATORY EQUIPMENT

Use specified dust masks.

HAND PROTECTION

Wear protective gloves. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.

EYE PROTECTION

Use tight fitting goggles if dust is generated.

OTHER PROTECTION

Wear appropriate clothing to prevent any possibility of skin contact. Provide eyewash station.

HYGIENE MEASURES

Promptly remove any clothing that becomes contaminated. Wash promptly if skin becomes contaminated. Wash hands after handling. When using do not eat, drink or smoke.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Powder, dust
COLOUR	Grey

10 STABILITY AND REACTIVITY**STABILITY**

Stable under normal temperature conditions and recommended use.

CONDITIONS TO AVOID

Water, moisture.

HAZARDOUS DECOMPOSITION PRODUCTS

None under normal conditions.

11 TOXICOLOGICAL INFORMATION**INHALATION**

May cause damage to mucous membranes in nose, throat, lungs and bronchial system.

TAMCRETE MFC**INGESTION**

May cause discomfort if swallowed.

SKIN CONTACT

Prolonged and frequent contact may cause redness and irritation.

EYE CONTACT

Risk of serious damage to eyes. Contact with concentrated chemical may very rapidly cause severe eye damage, possibly loss of sight.

12 ECOLOGICAL INFORMATION**ECOTOXICITY**

The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

13 DISPOSAL CONSIDERATIONS**GENERAL INFORMATION**

When handling waste, consideration should be made to the safety precautions applying to handling of the product.

DISPOSAL METHODS

Dispose of waste and residues in accordance with local authority requirements. Recover and reclaim or recycle, if practical.

14 TRANSPORT INFORMATION**GENERAL**

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

15 REGULATORY INFORMATION**RISK PHRASES**

R41 Risk of serious damage to eyes.

SAFETY PHRASES

S25 Avoid contact with eyes.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S39 Wear eye/face protection.
S60 This material and its container must be disposed of as hazardous waste.
P17 Contains chromium (VI). May produce an allergic reaction.

STATUTORY INSTRUMENTS

Poisons schedule: None allocated

APPROVED CODE OF PRACTICE

Safety Data Sheets for Substances and Preparations. Classification and Labelling of Substances and Preparations Dangerous for Supply.

NATIONAL REGULATIONS

National Code of Practice for the Preparation of Material Safety Data Sheets

2nd Edition [NOHSC:2011(2003)] Approved Criteria for Classifying Hazardous Substances [NOHSC:1008(2004)] 3rd Edition

Standard for the Uniform Scheduling of Drugs and Poisons, No. 23 (the SUSDP No 23)

16 OTHER INFORMATION**INFORMATION SOURCES**

Adopted national exposure standards for atmospheric contaminants in the occupational environment [NOHSC:1003(1995)]

REVISION DATE

02/04/2009

REV. NO./REPL. SDS GENERATED

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RISK PHRASES IN FULL

R41 Risk of serious damage to eyes.

DISCLAIMER

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. TAM International shall not be held liable for any damage resulting from contact with or handling of the above product.

DESCRIPTION



TamCrete MFC and TamCrete SFC are Microfine Portland cements for rock injection. The superfine particle size, together with the addition of TamCem Superplasticisers, provides superior penetration into tight joints, fissures, thus providing a water-tight grouted rock mass.

TamCrete MFC and SFC are ground from pure Portland cement clinker to achieve a Blaine surface value of > 625 m²/kg.

All grades of our TamCrete MFC and SFC achieve initial and final set faster than OPC, which reduces the waiting time to a minimum for the next activity to start. This increases productivity in a tunnel grouting operation. The initial set time can be adjusted depending on the level of TamCem superplasticiser or TamCem HCA added to the mix.

All of our TamCrete MFC and SFC materials are quality assured by the Cement Industry Quality Assurance Scheme, independently monitored by the British Standards Institute (SBI QAS 2420/47).

KEY BENEFITS

- > Standard cement injection equipment can be used
- > Superior penetration into rock fissures
- > Fast initial gel and setting
- > Higher strengths achievable than with chemical grouts
- > Greater penetration imparts greater water tightness
- > Better working environment and no hazardous components
- > Durable
- > Economical solution

TYPICAL APPLICATIONS

- > Rockmass grouting for tunnels, caverns, mines, etc., used for pre and post excavation injection. Ground water sealing and ground stabilisation.
- > Soil Injection: Ground stabilisation, ground water sealing.
- > Concrete crack injection
- > Consolidation of weak and fractured rock
- > Sealing of water channel

TECHNICAL DATA

	Particle Size (approx.)			
Grain Size μm	MFC Rapid	MFC Fast	MFC Standard	SFC
<40	100 %	100 %	100%	99
<30	100 %	100 %	99%	97
<20	99 %	99 %	95%	90
<15	95 %	95 %	85%	75
<10	83 %	83 %	70%	60
<5	56 %	56 %	45%	35
<2	30 %	30 %	25%	15
	MFC Rapid	MFC Fast	MFC Standard	SFC
Grain Size d_{50} (μm)	< 5	< 5	< 7.5	< 10
Grain Size d_{95} (μm)	< 16	< 16	< 20	< 25
Run out time after mixing (sec/DM ₃) (Marsh Cone)	31 - 35	31 - 35	31 - 35	31 - 35
Initial Gel (min)	30 - 45	70 - 110	120 - 180	150 - 250
Initial Set (50 kPa shear strength) (min)	45 - 75	90 - 150	180 - 300	200 - 350
Bleeding Maximum	< 2%	< 2%	< 5%	< 5 %
Mud Balance (kg/l)	1.45 - 1.50	1.45 - 1.50	1.45 - 1.50	1.45 - 1.50
CS, 1 day (MPa)	~5	~5	~4	~ 3
CS, 2 days (MPa)	~10	~10	~7	~ 5
CS, 28 days (MPa)	~15	~15	~15	~ 12

All technical data stated herein is based on tests carried out under laboratory conditions. Slurry was prepared with a high colloidal mixer (2 litre batches).

All mix designs incorporated TamCem admixtures. For further information on specific MFC and SFC versions and specific mix design, please contact your local Normet representative.

APPLICATION GUIDELINES

Mixing

Water/Cement ratio (by weight) shall normally be between 0.8 - 1.2.

- > Fill the mixer with water and superplasticizer.
- > Add Cement. Mix for 2 - 3 minutes.
- > Add HCA. Mix for 1 minute (if required).
- > Transfer to agitator tank ready for injection.

For efficient mixing and dispersion of our TamCrete MFC and SFC, a high speed colloidal mixer is recommended. Minimum stirring rate shall be 1500 rpm. Note: Mixing time should be kept to a maximum of 4 minutes.

Pot Life

The mix shall be kept under constant agitation prior to injection. Do not keep grout in agitator for longer than 30 minutes, unless the open time has been extended accordingly with the use of TamCem HCA hydration control admixture.

Injection

High-pressure piston pumps are normally used to pump the suspension into the rock. The grout should be injected within 20 - 60 minutes (depending on grade) after mixing to ensure that it keeps penetrating into the fissures. Longer open times can be achieved with TamCem HCA.

PACKAGING

TamCrete MFC and SFC products are supplied in 20 kg bags or 1000kg bulker bags. Packaging size may vary subject to local regulations and requirements.

STORAGE

TamCrete MFC and SFC products should be stored at room temperature (min 10°C and max 45°C), kept dry and out of direct sunlight. If these conditions are maintained and the product packaging is unopened, then a shelf life of six months can be expected.

HEALTH & SAFETY

TamCrete MFC and SFC products should only be used as directed. We always recommend that the Safety Data Sheet (SDS) is carefully read prior to application of the material. Our recommendations for protective equipment should be strictly adhered to for your personal protection. The Health & Safety data sheet is available upon request from your local Normet representative.