

Super-fluid hydraulic binder for injections

DESCRIPTION

DRYcem Micro-fluid is a superfluid expansive cementitious binder for obtaining injection slurries for the consolidation and waterproofing of masonry.

USAGES

- > Masonry consolidation;
- > Filling of cavities and cracks in damaged masonry and rock;
- > Consolidation of rocks and soils.

ADVANTAGES

- > High fluidity;
- > Good mechanical resistance;
- > Reduction of bleeding;
- > Compensated withdrawal;
- > High cohesion of the mixtures.

FEATURES

<i>Apparent specific gravity</i>	970 kg/m ³
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Performance of the grout (DRYcem Micro-fluid + 32% of water)

Fluidity to the cone (EN445)	13 s after mixing; 20 s after 30 minutes
Setting time (EN 196-3)	beginning > 4 hours ; end < 8 hours
Compressive strength (EN 12190)	30 MPa a 1 g
	60 MPa a 7 gg
	75 MPa a 28 gg



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METHOD OF USE

Pour 6.4 liters of water into the mixer, then, while stirring, add 1 20 kg bag of DRYcem Micro-fluid and mix for a few minutes until a fluid, lump-free slurry is obtained.

In the case of consolidation injections, after having made the holes, wash the internal pores abundantly with water, starting from the top to allow the powder and loose particles to come out of the underlying holes. The washing must be carried out several times in order to obtain the total cleanliness of the internal surface.

YIELD

1.5 kg of DRYcem Micro-fluid for each liter of cavity to be filled.

PACKAGING AND STORAGE

DRYcem Micro-fluid is packaged in 20 kg bags. Preserved in its original packaging, it has a shelf life of 12 months. The particular packaging, made in 20 kg vacuum-packed polyethylene bags, allows the product to be stored outside for the entire duration of the construction site.

SAFETY

Non-toxic alkaline product. The use of protective gloves and goggles is recommended. In case of contact with the eyes or skin, wash immediately and abundantly with water and consult a doctor.

The indications contained in this sheet correspond to our best and current knowledge. There may be variations in the different stages of the placement for which we have no responsibility because they are out of our direct control. Our guarantee is therefore limited to the quality and characteristics described above. We reserve the right to make changes to the aforementioned sheet in the interest of improving our information service.

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1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/ UNDERTAKING

1.1 PRODUCT IDENTIFIER	Commercial Product Name:	DRYcem Micro-fluid
1.2 RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST	Description / Use:	Special hydraulic binder
	Relevant identified uses	Industrial, Professional, Consumer
1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET	Company:	Drytech International SA via Industrie 12 CH-6930 Bedano TI SVIZZERA
	T	+41 (0)91 960 23 49
	@	info@drytechinternational.com
1.4 EMERGENCY TELEPHONE NUMBER	Switzerland: 145 From abroad: +41 44 251 51	

2. HAZARDS IDENTIFICATION

2.1 SUBSTANCE OR MIXTURE CLASSIFICATION	Classification according to Regulation (EC) No. 1272/2008	Skin Irrit. 2; H315 Skin Sens. 1B; H317 Eye Dam. 1; H318 STOT SE 3; H335
2.2 LABEL ELEMENTS	Hazard labeling pursuant to Regulation (EC) 1272/2008 (CLP) and subsequent amendments and adjustments.	 
	Hazard statements:	H315 Causes skin irritation H317 May cause an allergic skin reaction H318 Causes serious eye damage H335 It can irritate the respiratory tract
	Precautionary advice:	P261 Avoid breathing dust. P271 Use only outdoors or in a well-ventilated area. P272 Contaminated work clothing should not be allowed out of the workplace. P280 Wear protective gloves / clothing / Protect eyes / face.

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P302+P352 IN CASE OF CONTACT WITH SKIN: wash abundantly with water.

P305+P351+P338 IN CASE OF CONTACT WITH THE EYES: rinse thoroughly for several minutes. Remove any contact lenses if easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER or doctor.

P312 If you feel unwell, call a POISON CENTER / doctor /.

P321 Specific treatment (see ... on this label).

P332+P313 In case of skin irritation: consult a doctor.

P333+P313 If skin irritation or rash occurs: seek medical attention.

P362+P364 Remove all contaminated clothing and wash it before wearing it again.

P403+P233 Keep container tightly closed and in a well-ventilated place

P405 Keep locked up.

P501 Discard contents / container in accordance with local regulations.

Hazardous components to be reported on the label:

Portland cement, Cr(VI) < 2 ppm; calcium oxide

2.3. OTHER DANGERS

Information not available.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

*The mixture does not contain any substance considered to be persistent, bioaccumulating and toxic (PBT).
The mixture contains no substance considered to be very persistent to very bioaccumulating (vPvB).*

3.1. SUBSTANCES

Not relevant information.

3.2 MIXTURES

Hazardous components

	<i>Identification</i>	<i>Classification 1272/2008 (CLP)</i>	<i>Concentration %</i>
Portland cement, Cr(VI) < 2 ppm	CAS n. 65997-15-1 CE n. 266-043-4	Skin Irrit. 2; H315 Skin Sens. 1B ; H317 Eye Dam. 1;H318 STOT SE 3; H335	≥ 75 - < 100

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Calcium oxide	CAS: 1305-78-8 EC: 215-138-9 REACH: 01-2119475325-36-XXXX	STOT SE 3, H335; Skin Irrit. 2, H315; Eye Dam. 1, H318	≥ 2.5 - < 5
Crystalline silica (Ø <10 µ)	CAS: 14808-60-7 EC: 238-878-4	STOT RE 2, H373	≥ 0.05 - < 0.1
Cyclohexane	CAS: 110-82-7 EC: 203-806-2 REACH: 01-2119463273-41-XXXX	Flam. Liq. 2, H225; Asp. Tox. 1, H304; Skin Irrit. 2, H315; STOT SE 3, H336; Aquatic Acute 1, H400; Aquatic Chronic 1, H410	< 0.00015

The full text of the hazard statements (H) is given in section 16 of the sheet.

4. FIRST AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES	Eyes:	Eliminate any contact lenses. Wash immediately and abundantly with water, opening the eyelids well. Consult a physician.
	Skin:	Remove contaminated clothing and shoes. Wash immediately with plenty of soap and water. Consult a physician.
	Ingestion:	Do not induce vomiting unless expressly authorized by your doctor. Rinse your mouth with water. Consult a physician immediately.
	Inhalation	Bring the subject out into the fresh air. Consult a physician according to symptoms.
4.2 MAIN SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED	Risks:	Eye irritation Damage to the Eyes Skin irritation Erythema
4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED		Information not available.

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5. FIREFIGHTING MEASURES

5.1 EXTINGUISHING MEDIA	<i>Suitable extinguishing media:</i>	Water, carbon dioxide.
	<i>Unsuitable extinguishing media:</i>	No one in particular.
5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE	<i>Hazards due to exposure in case of fire</i>	No known dangers.
5.3 ADVICE FOR FIREFIGHTERS	<i>General informations</i>	Use suitable respiratory equipment.

6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES	<i>Personal precautions:</i>	Avoid the formation of dust. Avoid contact with skin and eyes. Wear protective clothing. Handle in accordance with good hygiene and safety practices relating to construction materials.
6.2 ENVIRONMENTAL PRECAUTIONS	<i>Environmental Precautions:</i>	Prevent the product from entering sewers, surface water, groundwater.
6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP		Sweep up and collect the spilled product.
6.4 REFERENCE TO OTHER SECTIONS		Any information regarding personal protection and disposal is given in sections 8 and 13.

7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING	<p>Avoid the formation of dust. The cement contained in this product gives an alkaline reaction with water or humidity.</p> <p>This can cause severe irritation of the skin or mucous membranes. The moisture of the skin or mucous membranes is sufficient for this reaction. Therefore prolonged direct contact with the dry product must be avoided.</p> <p>Avoid the inhalation of powders.</p>
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When emptying the bags, drop the material from the lowest possible height.

Breathing must be protected when handling large quantities without local ventilation.

7.2. CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Keep the containers closed, in a dry place. Respect the maximum recommended storage times.

7.3. SPECIFIC END USES

Information not available.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

8.1 CONTROL PARAMETERS

Portland cement, Cr(VI) < 2 ppm

OEL type	Country	Long term mg/m ³	Note
ACGHIN	NNN	1	(E, R), A4 – Pulm func, resp symptoms, asthma
National	Finland	5	FINLAND, inhalerbart damm
National	Finland	1	FINLAND, respirabel fraktion
NDS	Poland	6	frakcja wdychalna
NDS	Poland	2	frakcja respirabilna
SUVA	Switzerland	5	

Calcium oxide

OEL type	Country	Long term mg/m ³	Note
NDS	NNN	2	
NDSch	NNN	6	
ACGHIN	NNN	2	URT irr
National	Sweden	1	Short term value = 2.5 - 15 minutes average value
National	Finland	2	
National	Norway	2	NORWAY, T
National	Finland	2	
National	Norway	2	Short term value = 4

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Crystalline silica ($\varnothing < 10 \mu$)

OEL type	Country	Long term mg/m ³	Note
National	Sweden	0.1	SWEDEN, respirable aerosol
National	Norway	0.3	NORWAY, K7
NDS	Poland	2	frakcja wdychalna
NDS	Poland	0.3	frakcja respirabilna
National	Norway	0.3	inhalable aerosol
National	Norway	0.1	Respirable aerosol
UE	NNN	0.1	A2 (R) - Pulm fibrosis, lung cancer
ACGIH	NNN	0.025	(R), A2 - Pulm fibrosis, lung cancer

Cyclohexane

OEL type	Country	Long term mg/m ³	Short term mg/m ³	Note
SUVA	NNN	700	2800	
NDS	NNN	300	1000	
National	Sweden	1000	1300	Short term value, 15 minutes average value
National	Finland	350	875	
National	Norway	525		
UE	NNN	700		
National	Norway	172	344	
ACGIH	NNN	100 ppm		CNS impair

Components with a value PNEC:

Calcium oxide

PNEC limit	Exposure via
0.207 mg/l	Marine water
3.627 mg/kg	Freshwater sediments
3.627 mg/kg	Marine water sediments
0.207 mg/l	Freshwater

Cyclohexane

PNEC limit	Exposure via
0.207 mg/l	Marine water
3.627 mg/kg	Freshwater sediments

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3.627 mg/kg Marine water sediments

0.207 mg/l Freshwater

Components with a DNEL value:

Calcium oxide:

Industrial worker	Consumer	Exposure via	Exposure frequency
4 mg/m ³	4 mg/m ³	Human inhalation	Short term, local effects
1 mg/m ³	1 mg/m ³	Human inhalation	Long term, local effects

Cyclohexane

Industrial worker	Consumer	Exposure via	Exposure frequency
700 mg/m ³	4 mg/m ³	Human inhalation	Breve termine, systemic effects
2016 mg/kg	1 mg/m ³	Human cutaneous	Long term, systemic effects
700 mg/m ³		Human inhalation	Long term, systemic effects
	412 mg/m ³	Human inhalation	Breve termine, systemic effects
	1186 mg/kg	Human cutaneous	Long term, systemic effects
	206 mg/m ³	Human inhalation	Long term, systemic effects
	59.4 mg/kg	Human Oral	Long term, systemic effects

8.2 EXPOSURE CONTROLS	<i>Eye protection:</i>	Safety glasses with side shields (eg EN 166)..
	<i>Hand protection</i>	Protective work gloves(rif. EN 374).
	<i>Skin protection:</i>	Protection should be chosen based on the level of activity and exposure. Wear protective clothing.
	<i>Respiratory protection</i>	Use respiratory protection in case of dust formation (type EN 143 P1).
	<i>General measures of Hygiene and safety</i>	Avoid contact with skin, eyes and clothes. Avoid inhaling the dusts. To prevent contamination during handling closed work clothes and gloves should be used. Handle according to good hygiene and safety practices. Do not eat, drink or smoke during use. Hands and / or face should be washed before breaks or at the end of the shift. At the end of the work the skin should be clean and a skin cream applied. Inspect the gloves regularly and before use.

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Replace them if necessary. Clean or dispose of contaminated equipment and clothing after use.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

<i>Physical state:</i>	Solid-powder
<i>Color:</i>	Gray
<i>Odour:</i>	Odorless
<i>Odor threshold:</i>	Unavailable
<i>pH (10% aqueous dispersion)</i>	10.00
<i>Melting point or freezing:</i>	Unavailable
<i>Initial boiling point.</i>	Unavailable
<i>Boiling range.</i>	Unavailable
<i>Flash point.</i>	Unavailable
<i>Evaporation rate</i>	Unavailable
<i>Flammability of solids and gases</i>	Unavailable
<i>Lower flammability limit.</i>	Unavailable
<i>Upper flammability limit.</i>	Unavailable
<i>Lower explosive limit.</i>	Unavailable
<i>Upper explosive limit.</i>	Unavailable
<i>Vapor pressure.</i>	Unavailable
<i>Density Vapors</i>	Unavailable
<i>Specific gravity (apparente)</i>	0.97 kg/l
<i>Solubility</i>	Unavailable
<i>Partition coefficient:</i>	Unavailable
<i>n-octanol/water:</i>	Unavailable
<i>Self-ignition temperatures.</i>	Unavailable
<i>Decomposition temperatures.</i>	Unavailable
<i>Viscosity</i>	Unavailable
<i>Explosive properties</i>	Unavailable
<i>Oxidising properties</i>	Unavailable

9.2. OTHER INFORMATION

Other information: Not available

10. STABILITY AND REACTIVITY

10.1. REACTIVITY

There are no particular risks of reaction with other substances under normal conditions of use.

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10.2. CHEMICAL STABILITY	The product is stable under normal conditions of use and storage.
10.3 POSSIBILITY OF HAZARDOUS REACTIONS	Under normal conditions of use and storage no dangerous reactions are foreseeable.
10.4 CONDITIONS TO AVOID	No one in particular. See section 7.
10.5 INCOMPATIBLE MATERIALS	No one in particular.
10.6. HAZARDOUS DECOMPOSITION PRODUCTS	No dangerous decomposition products under normal conditions of use.

11. TOXICOLOGICAL INFORMATION

11.1 TOXICOLOGICAL INFORMATION	<i>Contains concrete. The cement in contact with sweat or other body fluids produces a strongly alkaline reaction, so contact with the eyes and the skin must be carefully avoided.</i>
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Toxicological information of the product: No data available

Toxicological information on components:

Calcium oxide:	LD50 Oral Rat < 2000 mg/kg LD50 Skin Rat < 2500 mg/kg
Crystalline silica ($\varnothing < 10\mu$):	LD50 Oral Rat = 500 mg/kg
Cyclohexane:	LC50 Inhalation Rat < 32880 mg/m ³ 4h LD50 Oral Rat > 5000 mg/kg LD50 Skin Rabbit > 2000 mg/kg

12. ECOLOGICAL INFORMATION

12.1 TOXICITY	calcium oxide:	a) Acute aquatic toxicity: LC50 Fish = 457 mg/L 96 a) Acute aquatic toxicity: EC50 Dafnie = 49,1 mg/L 48 b) Chronic aquatic toxicity: NOEC Dafnie = 32 mg/L - 14 d a) Acute aquatic toxicity: LC50 Fish = 50,6 mg/L 96 a) Acute aquatic toxicity: LC50 Dafnie = 158 mg/L 96 a) Acute aquatic toxicity: EC50 Algae = 184,57 mg/L 72 b) Chronic aquatic toxicity: NOEC Algae = 48 mg/L 72
12.2. PERSISTENCE AND DEGRADABILITY		N.D.

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12.3. POTENTIAL OF BIOACCUMULATION	N.D.
12.4. MOBILITY IN THE SOIL	N.D.
12.5. RESULTS OF PBT AND vPvB ASSESSMENT	The product does not contain substances that meet the PBT or vPvB criteria.
12.6. OTHER ADVERSE EFFECTS	N.D.

13. CONSIDERATIONS ON DISPOSAL

13.1 WASTE TREATMENT METHODS	<i>Product</i>	The generation of waste should be avoided or minimized wherever possible. Empty containers or liners can retain product residues. Do not dispose of the product and the container except with due precautions.
	<i>Contaminated containers</i>	Contaminated packaging must be sent for recovery or disposal in compliance with national waste management regulations. Eliminate surplus and non-recyclable products through an authorized waste disposal contractor. The elimination of this product, solutions and any by-product must always be carried out in compliance with the requirements of the law on environmental protection and waste disposal and the requirements of the relevant local regional authorities. Avoid the dispersion and runoff of the spilled material and contact with soil, water courses, drains and sewers.
	<i>European waste catalog:</i>	17 01 06* mixtures or slags of concrete, bricks, tiles and ceramics containing dangerous substances
	<i>Contaminated containers:</i>	15 01 10* packaging containing residues of dangerous substances or contaminated by such substances.

14. TRANSPORT INFORMATION

14.3. DANGER CLASSES CONNECTED TO TRANSPORT	The product is not to be considered dangerous pursuant to the provisions in force on the transport of dangerous goods by road (A.D.R.), by rail (RID), by sea (IMDG Code) and by air (IATA).
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14.7. TRANSPORT IN BULK
ACCORDING TO ANNEX II OF
MARPOL 73/78 AND THE IBC
CODE

Not applicable.

HS-Code 38245090

15. REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND
ENVIRONMENTAL REGU-
LATIONS/LEGISLATION
SPECIFIC FOR THE SUB-
STANCE OR MIXTURE

Regulation n°. 1907/2006/CE (REACH); (All. XVII - Art. 59 (Substances in "Candidate List");

Regulation n°. 1272/2008/CE (CLP) e s.m.i.;

Directive n ° 1999/45 / EC (Dangerous preparations) and subsequent amendments;

Directive 67/548 / EEC (Classification, Packaging and Labeling of dangerous substances) and subsequent amendments;

Regulation n °. 790/2009 / EC (amending, for the purposes of adaptation to technical and scientific progress, ATP of regulation no. 1272/2008 / EC);

Legislative Decree 81/2008 (Consolidated law on the protection of health and safety in the workplace) and subsequent amendments and Directive 2009/161 / EU

15.2. CHEMICAL SAFETY
ASSESSMENT

A chemical safety assessment is not required.

16. OTHER INFORMATION

*Text of the hazard statements (H)
and of the abbreviations mentioned in
sections 2-3*

H225 Highly flammable liquids and vapors.
H304 It can be fatal if swallowed and if it enters the respiratory tract
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H335 It can irritate the respiratory tract.
H336 It can cause drowsiness or dizziness.
H373 May cause damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic organisms.
H410 Very toxic to aquatic life with long lasting effects.

Flam. Liq. 2 Flammable liquid, category 2
Asp. Tox. 1 Danger in case of aspiration, category 1
Skin Irrit. 2 Skin irritation, category 2
Eye Dam. 1 Serious eye damage, category 1
Skin Sens. 1B Awareness raising of the skin, category 1B

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- STOT SE 3 Specific target organ toxicity - single exposure, category 3
- STOT RE 2 Specific target organ toxicity - repeated exposure, category 2
- Aquatic Acute 1 Acute danger to the aquatic environment, category 1
- Aquatic Chronic 1 Chronic (long-term) danger to the aquatic environment, category 1

The information contained in this sheet is based on the knowledge available to us at the date of the latest version.

The user must ensure the suitability and completeness of the information in relation to the specific use of the product. This document should not be construed as a guarantee of any specific property of the product.

Since the use of the product does not fall under our direct control, it is the user's obligation to observe the laws and regulations in force on hygiene and safety under their own responsibility. No responsibility is assumed for improper use. Provide adequate training to personnel assigned to the use of chemical products.
