





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

- **Product identifier**
- **Trade name:** *FIXIT 223 Special reinforcement mortar*
- **Relevant identified uses of the substance or mixture and uses advised against**
- **Application of the substance / the preparation**
Ready-mixed mortar
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
FIXIT AG
Im Schachen 416
CH-5113 Holderbank AG
Tel.: +41/(0)62-887 51 51
Fax: +41/(0)62-887 53 53
Mail: info@fixit.ch
Web: www.fixit.ch
- **Further information obtainable from:**
Product safety department (on working days 8:00 - 16:00)
- **Emergency telephone number:**
National poisons information centre: +44/(0)171 - 635 9191
European emergency call: 112

2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
 -  GHS05 corrosion
Eye Dam. 1 H318 Causes serious eye damage.
 -  GHS07
Skin Irrit. 2 H315 Causes skin irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**
 -  Xi; Irritant
R38-41: Irritating to skin. Risk of serious damage to eyes.
 -  Xi; Sensitising
R43: May cause sensitisation by skin contact.
- **Information concerning particular hazards for human and environment:**
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

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· **Classification system:**

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

· **Additional information:**

The classification in terms of skin and eye irritation is based on the results of animal studies, see section 16 literature [4], [11] and [12].

· **Label elements**

· **Labelling according to EU guidelines:**

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.

Observe the general safety regulations when handling chemicals.

· **Code letter and hazard designation of product:**



Xi Irritant

· **Hazard-determining components of labelling:**

Portland cement clinker

· **Risk phrases:**

38 Irritating to skin.

41 Risk of serious damage to eyes.

43 May cause sensitisation by skin contact.

· **Safety phrases:**

2 Keep out of the reach of children.

22 Do not breathe dust.

24/25 Avoid contact with skin and eyes.

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

46 If swallowed, seek medical advice immediately and show this container or label.

· **Information concerning particular hazards for human and environment:**

Dust from the dry mixture can cause respiratory irritation. Frequent inhalation of large amounts of dust increases the risk of developing lung diseases.

As soon as the dry mixture comes into contact with water or humidity, a strongly alkaline solution will be formed. Wet mortar may cause skin and eye irritation due to the high alkalinity. Especially with prolonged contact (e.g. knees in wet mortar) the risk of serious skin damage increases due to the alkalinity.

· **Other hazards**

The part of respirable, cristaline siliciumdioxide amounts below 1%. The product ist no subject to a declaration obligation. However, the use of breathing protection is advisable.

The mixture is chromate reduced and therefore is no risk of sensitization by chromate. The ready to use form after addition of water contains in maximum 0,0002% of soluble chromium(VI) based on the dry weight of the cement. Proper dry storage and compliance with the maximum storage time is required for an effective chromate reduction.

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- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:**
Mixture of inorganic binders, fillers, and nonhazardous

- **Dangerous components:**

CAS: 14808-60-7 EINECS: 238-878-4	Silicon dioxide, quartz sand (<1% RCS) substance with a Community workplace exposure limit	> 1.0%
CAS: 1305-62-0 EINECS: 215-137-3 Reg.nr.: 01-2119475151-45	Calcium dihydroxide ☒ Xi R37/38-41 ☒ Eye Dam. 1, H318; ☒ Skin Irrit. 2, H315; STOT SE 3, H335	2.5-10%
CAS: 65997-15-1 EINECS: 266-043-4 Reg.nr.: 02-2119682167-31	Portland cement clinker ☒ Xi R37/38-41; ☒ Xi R43 ☒ Eye Dam. 1, H318; ☒ Skin Irrit. 2, H315; Skin Sens. 1, H317; STOT SE 3, H335	2.5-10%

- **Additional information:** For the wording of the listed risk phrases refer to section 16.

4 First aid measures

- **Description of first aid measures**



First aid

- **General information:**
Seek medical treatment in case of complaints.
- **After inhalation:**
Take affected persons out of danger area and lay down.
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
Immediately remove all soiled and contaminated clothing
Wash contaminated clothes before reuse. Clean contaminated shoes before reuse.
If skin irritation continues, consult a doctor.
- **After eye contact:**
Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
Seek medical treatment.

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- **After swallowing:**
Rinse out mouth and then drink plenty of water.
Seek medical treatment.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed**
Symptoms and effects are described in section 2 and 11.
- **Hazards**
No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
Treatment symptomatic.

5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam. The product is not flammable. Use fire extinguishing methods suitable to surrounding conditions.
- **For safety reasons unsuitable extinguishing agents:**
No further relevant information available.
- **Special hazards arising from the substance or mixture**
Inorganic dust can appear in case of fire. Avoid formation of dust. Reacts alkaline with water.
- **Advice for firefighters**
Wear protective equipment. Keep unprotected persons away.
- **Protective equipment:**
Use adequate breathing protection and inherent protection clothes in dependance on extent of fire.
- **Additional information**
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Avoid formation of dust. Avoid inhalation, eye and skin contact. If appropriate, reference must be made to exposure controls and personal protection (see section 8).
- **Environmental precautions:**
The product must not get in contact with soil, surface water and ground water before complete hardening.
- **Methods and material for containment and cleaning up:**
Allow to solidify. Pick up mechanically.
Dispose of the material collected according to regulations.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.

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See Section 13 for disposal information.

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7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace. Prevent formation of dust. Avoid contact with the eyes and skin. Wear protective clothing. Washing facilities / Water for cleaning eyes and skin should be available. Persons, who tend to skin diseases or other hypersensitivity reactions of the skin, should not handle the product. Do not eat, drink, smoke or sniff while working.
- **Information about fire - and explosion protection:**
No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Keep out of reach of children.
Store in cool, dry place in tightly closed receptacles.
- **Information about storage in one common storage facility:**
Keep away from foodstuffs, beverages and feed.
- **Further information about storage conditions:**
Protect from humidity and water.
- **Minimum storage life:**
Minimum storage life (store dry, up to 20 °C): See indication on package.
- **Storage class:** 13
- **Specific end use(s)**
No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical facilities:**
No further data; see item 7.
- **Control parameters**

- **Ingredients with limit values that require monitoring at the workplace:**

14808-60-7 Silicon dioxide, quartz sand (<1% RCS)

AG (Norway)	Long-term value: 0.3* 0.1** mg/m ³ * totalstøv, K ** respirabelt støv, K
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1305-62-0 Calcium dihydroxide

WEL (Great Britain)	Long-term value: 5 mg/m ³
IOELV (EU)	Long-term value: 5 mg/m ³
AG (Norway)	Long-term value: 5 mg/m ³

65997-15-1 Portland cement clinker

WEL (Great Britain)	Long-term value: 10* 4** mg/m ³ *inhalable dust **respirable dust
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• **DNELs**

1305-62-0 Calcium dihydroxide

Inhalative	DNEL (15min.)	4 mg/m ³ (Workers)
	DNEL (8h)	1 mg/m ³ (Workers)

- A - Alveoles passing particles E - Respirable particles (DIN EN 481)

• **Additional information:**

The lists valid during the making were used as basis.

• **Exposure controls**

• **Personal protective equipment:**

• **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed. Remove contaminated clothing immediately and thoroughly clean it before using it again. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin. Do not eat, drink, smoke or sniff while working. Use skin protection cream for skin protection. Ensure that washing facilities are available at the work place.

• **Respiratory protection:**



Use respiratory protective device against the effects of dust (type P2/FFP2 according to standard EN143/EN149)

• **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

• **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

• **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

• **For the permanent contact gloves made of the following materials are suitable:**

Nitrile rubber, NBR

Recommended thickness of the material: $\geq 0,15\text{mm}$

• **Not suitable are gloves made of the following materials:**

Leather gloves

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· **Eye protection:**



Tightly sealed safety glasses according to EN 166

· **Body protection:**



Protective work clothing

· **Limitation and supervision of exposure into the environment**

Do not allow product to reach water because an increase of pH may be caused. Ecotoxicological effects may occur when the pH-value is above 9. National regulations for waste water and groundwater are to be observed.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

· Form:	Powder
· Colour:	Light grey
· Odour:	Characteristic

· pH-value at 20 °C:	11 - 12 Saturated aqueous solution
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· **Change in condition**

· Melting point/Melting range:	> 1300 °C
· Boiling point/Boiling range:	Not applicable.

· Flash point:	Not applicable.
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· Flammability (solid, gaseous):	Product is not flammable.
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· **Ignition temperature:**

· **Decomposition temperature:** Not determined.

· Self-igniting:	Product is not selfigniting.
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· Danger of explosion:	Product does not present an explosion hazard.
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· Density:	Not determined.
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· Bulk density at 20 °C:	1400 - 1600 kg/m ³
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· Solubility in / Miscibility with water:	Slightly soluble
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· **Solvent content:**

· Organic solvents:	0.0 %
· VOC (EC)	0.00 %

· Solids content:	100.0 %
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· **Other information** No further relevant information available.

10 Stability and reactivity

· **Reactivity**

Reacts alkaline with water. A proposed reaction takes place in contact with water, during which the product hardens and forms a solid mass, which does not react with the environment.

· **Chemical stability**

Stable at environment temperature.

· **Thermal decomposition / conditions to be avoided:**

No decomposition if used according to specifications.

· **Possibility of hazardous reactions**

Reacts with strong acids and oxidizing agents.

· **Conditions to avoid**

Keep away from water.

· **Incompatible materials:**

Reacts exothermically with acids. The wet product is alkaline and reacts with acids, ammonium salts and base metals e.g. aluminum, zinc or brass. The reaction with base metals produces hydrogen.

· **Hazardous decomposition products:**

No dangerous decomposition products known.

· **Minimum storage life:**

Minimum storage life (store dry, up to 20 °C): See indication on package.

· **Additional information:**

The mixture is chromate reduced. The ready for use preparation after addition of water contains in maximum 2 mg/kg dissolvable chrom(VI) related to the dry mass. Presupposition for the chromate reduction is the appropriate storage under consideration of the maximum storage life.

11 Toxicological information

· **Information on toxicological effects**

The product was not investigated. The statement is derived from the properties of the single components.

· **Acute toxicity:**

· **LD/LC50 values relevant for classification:**

1305-62-0 Calcium dihydroxide

Oral	LD50	7340 mg/kg (Rat) (OECD 425) >2500 mg/kg (Rabbit) (OECD 402)
Dermal	LD50	>2500 mg/kg (Rabbit) (OECD 402)

65997-15-1 Portland cement clinker

Dermal	LD0 (no lethality)	2000 mg/kg (Rabbit) (Limit test 24h [4])
Inhalative	LD0 (no lethality)	5 mg/m ³ (Rat) (Limit test [10])

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7631-86-9 Silicon dioxide, chemically prepared

Oral	LD50	10000 mg/kg (Rat)
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- **Primary irritant effect:**
 - **on the skin:** Irritant to skin and mucous membranes.
 - **on the eye:** Strong irritant with the danger of severe eye injury.
- **Sensitization:**
Sensitization possible through skin contact.
- **Subacute to chronic toxicity:**
Can cause serious skin damages in conjunction with skin-humidity at long term exposure. The contact with wet cement may cause skin eczema on some individuals. This can be triggered either by the pH (irritant contact dermatitis) or by immunological reaction of water soluble chromium(VI) (allergic contact dermatitis), see section 16 literature [5] and [13].
- **Additional toxicological information:**
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Irritant
- **Sensitisation**
Sensitization possible through skin contact.
There are no signs of respiratory sensitization. Based on available data, the classification criteria are not fulfilled, see Section 16 References [1].
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
None
A causal relationship between cement and cancer has not been determined, see Section 16 References [1] [14-16].
- **General information:**
See References section 16.

12 Ecological information

- **Toxicity**
The product was not investigated. The statement is derived from the properties of the single components.

- **Aquatic toxicity:**

1305-62-0 Calcium dihydroxide

EC50 (48h)	49.1 mg/l (Invertebrate)
EC50 (72h)	184.57 mg/l (Algae)
LC50 (96h freshwater)	50.6 mg/l (Fish)
LC50 (96h seawater)	457 mg/l (Fish)
	158 mg/l (Invertebrate)

65997-15-1 Portland cement clinker

LC50	- mg/l (Water flea - daphnia magma) (low effect [6,8]) - mg/l (Algae - selenastrum coli) (low effect [7,8]) - mg/l (Sediments) (low effect [9])
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- **Persistence and degradability**
Anorganic product, is not removable from water by biological cleaning process

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- **Behaviour in environmental systems:**
- **Bioaccumulative potential**
Does not accumulate in organisms
- **Mobility in soil**
Slightly soluble
- **Ecotoxic effects:**
Only by increasing the pH value during application of large quantities.

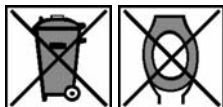
1305-62-0 Calcium dihydroxide

EC10/LC10 (NOEC)	12000 mg/kg (Microorganism soil) 2000 mg/kg (Macroorganism soil)
NOEC (14d seawater)	32 mg/l (Invertebrate)
NOEC (21d)	1080 mg/kg (Plants general)
NOEC (72h freshwater)	48 mg/l (Algae)

- **Behaviour in sewage processing plants:**
No further relevant information available.
- **Type of test Effective concentration Method Assessment**
No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects**
No further relevant information available.
- **Literature**
See References section 16.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation**
Smaller quantities can be disposed of with household waste.



Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Furthermore usable if dry gathered.
Mix remaining quantity with water until it hardens. Dispose in construction waste landfill.

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· European waste catalogue	
16 03 03*	Inorganic wastes containing dangerous substances
17 09 04	mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03
15 01 01	paper and cardboard packaging

- 16 03 03 for residues of the unprocessed product
- 17 09 04 for the water mixed and setted product
- 15 01 01 for the completely emptied packaging
- **Uncleaned packaging:**
- **Recommendation:**
 Disposal must be made according to official regulations.
 Recycle only completely emptied packaging.

14 Transport information

· UN-Number	Void
· ADR, ADN, IMDG, IATA	Void
· UN proper shipping name	Void
· ADR, ADN, IMDG, IATA	Void
· Transport hazard class(es)	Void
· ADR, ADN, IMDG, IATA	Void
· Class	Void
· Packing group	Void
· ADR, IMDG, IATA	Void
· Environmental hazards:	No
· Marine pollutant:	No
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· UN "Model Regulation":	-

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **National regulations:**
- **Waterhazard class:**
 Water hazard class 1 (Self-assessment): slightly hazardous for water.

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· **Chemical safety assessment:**

A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant phrases**

- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H318 Causes serious eye damage.
- H335 May cause respiratory irritation.
- R37/38 Irritating to respiratory system and skin.
- R41 Risk of serious damage to eyes.
- R43 May cause sensitisation by skin contact.

· **Literature**

- [1] Portland Cement Dust-Hazard assessment document EH75/7, UK Health and Safety Executive, 2006: <http://www.hse.gov.uk/pubns/web/portlandcement.pdf>.
- [2] Technische Regel für Gefahrstoffe „Arbeitsplatzgrenzwerte“, 2009, GMBI Nr.29 S.605.
- [3] MEASE 1.02.01 Exposure assessment tool for metals and inorganic substances, EBRC Consulting GmbH für Eurometaux, 2010
- [4] Observations on the effects of skin irritation caused by cement, Kietzman et al, Dermatosen, 47, 5, 184-189 (1999).
- [5] Epidemiological assessment of the occurrence of allergic dermatitis in workers in the construction industry related to the content of Cr (VI) in cement, NIOH, Page 11, 2003.
- [6] U.S. EPA, Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, 3rd ed. EPA/600/7-91/002, Environmental Monitoring and Support Laboratory, U.S. EPA, Cincinnati, OH (1994a).
- [7] U.S. EPA, Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, 4th ed. EPA/600/4-90/027F, Environmental Monitoring and Support Laboratory, U.S. EPA, Cincinnati, OH (1993).
- [8] Environmental Impact of Construction and Repair Materials on Surface and Ground Waters. Summary of Methodology, Laboratory Results, and Model Development. NCHRP report 448, National Academy Press, Washington, D.C., 2001.
- [9] Final report Sediment Phase Toxicity Test Results with Corophium volutator for Portland clinker prepared for Norcem A.S. by AnalyCen Ecotox AS, 2007.
- [10] TNO report V8801/02, An acute (4-hour) inhalation toxicity study with Portland Cement Clinker CLP/GHS 03-2010-fine in rats, August 2010.
- [11] TNO report V8815/09, Evaluation of eye irritation potential of cement clinker G in vitro using the isolated chicken eye test, April 2010.
- [12] TNO report V8815/10, Evaluation of eye irritation potential of cement clinker W in vitro using the isolated chicken eye test, April 2010.
- [13] European Commission's Scientific Committee on Toxicology, Ecotoxicology and the Environment (SCTEE) opinion of the risks to health from Cr (VI) in cement (European Commission, 2002): http://ec.europa.eu/health/archive/ph_risk/committees/sct/documents/out158_en.pdf.
- [14] Investigation of the cytotoxic and proinflammatory effects of cement dusts in rat alveolar macrophages, Van Berlo et al, Chem. Res. Toxicol., 2009 Sept; 22(9):1548-58

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[15] Cytotoxicity and genotoxicity of cement dusts in A549 human epithelial lung cells in vitro; Gminski et al, Abstract DGPT conference Mainz, 2008.

[16] Comments on a recommendation from the American Conference of governmental industrial Hygienists to change the threshold limit value for Portland cement, Patrick A. Hessel and John F. Gamble, EpiLung Consulting, June 2008.

[17] Prospective monitoring of exposure and lung function among cement workers, Interim report of the study after the data collection of Phase I-II 2006-2010, H. Notø, H. Kjuus, M. Skogstad and K.-C. Nordby, National Institute of Occupational Health, Oslo, Norway, March 2010.

[18] Anonymous, 2006: Tolerable upper intake levels for vitamins and minerals Scientific Committee on Food, European Food Safety Authority, ISBN: 92-9199-014-0 [SCF document]

[19] Anonymous, 2008: Recommendation from the Scientific Committee on Occupational Exposure Limits (SCOEL) for calcium oxide (CaO) and calcium dihydroxide (Ca(OH)₂), European Commission, DG Employment, Social Affairs and Equal Opportunities, SCOEL/SUM/137 February 2008

· **Department issuing MSDS:**

Product safety department (+43/(0)5522-41646-0 / klaus.ritter@fixit-gruppe.com)

· **Contact:** Dr. Klaus Ritter

· **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organization

MAK: Maximale Arbeitsplatz-Konzentration (maximum concentration of a chemical substance in the workplace, Austria/Germany)

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

DNEL: Derived No-Effect Level (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

GB