according to REACH Regulation UK SI 2019/758, as amended, and UK SI 2020/1577

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SECTION 1: Identification of the substance/mixture and o	f the company/undertaking
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1.1. Product identifier

Trade name/designation:

TYROLIT DUO 30

UFI:

S110-8023-H006-S58S

1.2. Relevant identified uses of the substance or mixture and uses advised against Use of the substance/mixture:

Impregnation agent

1.3. Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor): Tyrolit Construction Products GmbH

Swarovskistrasse 33 6130 Schwaz Austria

Telephone: +43 5242 6060

E-mail: construction@tyrolit.com

Website: www.tyrolit.com

E-mail (competent person): construction@tyrolit.com

In case of problematic exposure the enquirer should call NHS 111 or a doctor

1.4. Emergency telephone number

Environmental Department (available from 9 a.m. – 5 p.m.), +43 664 8292 740 (Only available during office hours.)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567:

Hazard classes and hazard categories	Hazard statements	Classification pro cedure
Skin corrosion/irritation (Skin Irrit. 2)	H315: Causes skin irritation.	
Serious eye damage/eye irritation (Eye Irrit. 2)	H319: Causes serious eye irritation.	

2.2. Label elements

Labelling according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567 Hazard pictograms:



Signal word: Warning

hazard statements for health hazards	
H315	Causes skin irritation.
H319	Causes serious eye irritation.

Supplemental hazard information: -

 Precautionary statements Prevention

 P260
 Do not breathe dust/fume/gas/mist/vapours/spray.

 P280
 Wear protective gloves/protective clothing/eye protection/face protection.

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Precautionary stat	Precautionary statements Response		
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.		
P332 + P313	If skin irritation occurs: Get medical advice/attention.		

2.3. Other hazards

No data available

SECTION 3: Composition / information on ingredients

3.2. Mixtures

Hazardous ingredients / Hazardous impurities / Stabilisers:

product identifiers	Substance name Classification according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567	Concen- tration
CAS No.: 1312-76-1 EC No.: 215-199-1 REACH No.: 01-2119456888-17-0002	Silicic acid, potassium salt Eye Irrit. 2 (H319), STOT SE 3 (H335), Skin Irrit. 2 (H315) Specific concentration limit (SCL) STOT SE 3; H335: $C \ge 75\%$ Eye Irrit. 2; H319: $C \ge 40\%$ Skin Irrit. 2; H315: $C \ge 40\%$	≤ 20 weight-%
CAS No.: 31795-24-1 EC No.: 250-807-9 REACH No.: 01-2119517439-34-0000	potassium methylsilanetriolate Eye Dam. 1 (H318), Skin Corr. 1A (H314) Danger	≤ 5 weight-%
CAS No.: 1310-66-3	lithium hydroxide Acute Tox. 4 (H302), Eye Dam. 1 (H318), Skin Corr. 1A (H314)	< 1 weight-%

Full text of H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information:

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Remove victim out of the danger area. Remove contaminated, saturated clothing. If unconscious but breathing normally, place in recovery position and seek medical advice. Do not leave affected person unattended.

Following inhalation:

Provide fresh air. In case of respiratory tract irritation, consult a physician.

In case of skin contact:

After contact with skin, wash immediately with plenty of water and soap. If skin irritation or rash occurs: Get medical advice/attention.

After eye contact:

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

Following ingestion:

If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Rinse mouth. Let water be drunken in little sips (dilution effect). Get medical advice/attention if you feel unwell.

Self-protection of the first aider:

Use personal protection equipment.

4.2. Most important symptoms and effects, both acute and delayed

Skin corrosion/irritation. Serious eye damage/eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed Treat symptomatically.

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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

The product itself does not burn. Co-ordinate fire-fighting measures to the fire surroundings.

Unsuitable extinguishing media:

Full water jet

5.2. Special hazards arising from the substance or mixture

Pyrolysis products, toxic. The product itself does not burn.

Hazardous combustion products:

Nitrogen oxides (NOx), Carbon dioxide (CO2), Carbon monoxide; In case of fire: Gases/vapours, toxic

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing.

5.4. Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Dispose of waste according to applicable legislation.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Personal precautions:

Remove persons to safety. Special danger of slipping by leaking/spilling product. Provide adequate ventilation.

Protective equipment:

Wear protective gloves/protective clothing/eye protection/face protection.

6.1.2. For emergency responders

Personal protection equipment:

Personal protection equipment: see section 8

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up

For containment:

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

For cleaning up:

Wipe up with absorbent material (eg. cloth, fleece). Wash with plenty of water.

Other information:

Treat the recovered material as prescribed in the section on waste disposal.

6.4. Reference to other sections

Safe handling: see section 7 Personal protection equipment: see section 8 Disposal: see section 13

6.5. Additional information

Use appropriate container to avoid environmental contamination.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Protective measures

Advices on safe handling:

Wear personal protection equipment (refer to section 8).

Fire prevent measures:

Usual measures for fire prevention. No special measures are necessary.

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Measures to prevent aerosol and dust generation:

Use only in well-ventilated areas.

Environmental precautions:

Do not allow to enter into surface water or drains.

Advices on general occupational hygiene

Wash hands before breaks and after work. Use protective skin cream before handling the product. When using do not eat, drink or smoke. Avoid contact with eyes and skin.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions:

Keep container tightly closed in a cool, well-ventilated place.

Packaging materials:

Keep/Store only in original container.

Requirements for storage rooms and vessels:

The floor should be leak tight, jointless and not absorbent.

Hints on storage assembly:

Do not store together with: Food and feedingstuffs

Storage class (TRGS 510, Germany): 12 – non-combustible liquids that cannot be assigned to any of the above storage classes

Further information on storage conditions:

Protect containers against damage. Keep away from heat.

7.3. Specific end use(s)

Recommendation:

Observe technical data sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. Occupational exposure limit values

Limit value type (country of origin)	Substance name	 Long-term occupational exposure limit value short-term occupational exposure limit value Instantaneous value Monitoring and observation processes Remark
WEL (GB)	silicon dioxide CAS No.: 112926-00-8 EC No.: 231-545-4	 2.4 mg/m³ (Silica, amorphous; respirable fraction)
WEL (GB)	silicon dioxide CAS No.: 112926-00-8 EC No.: 231-545-4	 6 mg/m³ (Silica, amorphous; inhalable fraction)

8.1.2. Biological limit values

No data available

8.1.3. DNEL-/PNEC-values

Substance name	DNEL value	① DNEL type	
		② Exposure route	
Silicic acid, potassium salt	1.38 mg/m ³	① DNEL Consumer	
CAS No.: 1312-76-1 EC No.: 215-199-1		② Long-term - inhalation, systemic effects	
Silicic acid, potassium salt	5.61 mg/kg	① DNEL worker	
CAS No.: 1312-76-1 EC No.: 215-199-1	bw/day	② Long-term – inhalation, local effects	
Silicic acid, potassium salt	0.74 mg/m ³	① DNEL Consumer	
CAS No.: 1312-76-1 EC No.: 215-199-1		② Long-term - dermal, systemic effects	

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Substance name	DNEL value	
	Diver value	 DNEL type Exposure route
Silicic acid, potassium salt	1.49 mg/kg	DNEL worker
CAS No.: 1312-76-1 EC No.: 215-199-1	bw/day	 2 Long-term - dermal, local effects
Silicic acid, potassium salt	0.74 mg/kg	① DNEL Consumer
CAS No.: 1312-76-1 EC No.: 215-199-1	bw/day	② Long-term - oral, systemic effects
potassium methylsilanetriolate CAS No.: 31795-24-1 EC No.: 250-807-9	47 mg/m ³	 DNEL worker Long-term - inhalation, systemic effects
potassium methylsilanetriolate	10 mg/m ³	DNEL Consumer
CAS No.: 31795-24-1 EC No.: 250-807-9		 2 Long-term – inhalation, systemic effects
potassium methylsilanetriolate	47 mg/m ³	① DNEL worker
CAS No.: 31795-24-1 EC No.: 250-807-9		② Acute - inhalation, systemic effects
potassium methylsilanetriolate CAS No.: 31795-24-1	10 mg/m ³	1 DNEL Consumer
EC No.: 250-807-9		② Acute - inhalation, systemic effects
potassium methylsilanetriolate	6.6 mg/kg	① DNEL worker
CAS No.: 31795-24-1 EC No.: 250-807-9	bw/day	② Long-term - dermal, systemic effects
potassium methylsilanetriolate	4 mg/kg bw/	① DNEL Consumer
CAS No.: 31795-24-1 EC No.: 250-807-9	day	② Long-term - dermal, systemic effects
potassium methylsilanetriolate	6.6 mg/kg	① DNEL worker
CAS No.: 31795-24-1 EC No.: 250-807-9	bw/day	② Acute - dermal, systemic effects
potassium methylsilanetriolate	4 mg/kg bw/	① DNEL Consumer
CAS No.: 31795-24-1 EC No.: 250-807-9	day	② Acute – dermal, systemic effects
potassium methylsilanetriolate	0.42 mg/kg	1 DNEL Consumer
CAS No.: 31795-24-1 EC No.: 250-807-9	bw/day	② Long-term - oral, systemic effects
Substance name	PNEC Value	① PNEC type
Silicic acid, potassium salt CAS No.: 1312-76-1 EC No.: 215-199-1	7.5 mg/l	① PNEC aquatic, freshwater
potassium methylsilanetriolate CAS No.: 31795-24-1 EC No.: 250-807-9	4.2 mg/l	① PNEC aquatic, freshwater
potassium methylsilanetriolate	0.42 mg/l	① PNEC aquatic, marine water
CAS No.: 31795-24-1 EC No.: 250-807-9		
potassium methylsilanetriolate	10 mg/l	① PNEC sewage treatment plant
CAS No.: 31795-24-1 EC No.: 250-807-9		
potassium methylsilanetriolate CAS No.: 31795-24-1 EC No.: 250-807-9	3.3 mg/kg	① PNEC sediment, freshwater
potassium methylsilanetriolate CAS No.: 31795-24-1 EC No.: 250-807-9	0.33 mg/kg	① PNEC sediment, marine water
potassium methylsilanetriolate CAS No.: 31795-24-1 EC No.: 250-807-9	3.3 mg/kg	① PNEC secondary poisoning

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8.2. Exposure controls

8.2.1. Appropriate engineering controls

Technical measures to prevent exposure

8.2.2. Personal protection equipment

Eye/face protection:

Eye glasses with side protection EN 166

Skin protection:

Tested protective gloves must be worn EN ISO 374. Suitable material: Butyl caoutchouc (butyl rubber), Breakthrough time: > 120 min. In the case of wanting to use the gloves again, clean them before taking off and air them well. Breakthrough times and swelling properties of the material must be taken into consideration.

Respiratory protection:

If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn. Respiratory protection necessary at: aerosol or mist formation. Filtering device (full mask or mouthpiece) with filter: P2

Other protection measures:

Do not breathe vapour/aerosol. Avoid contact with eyes and skin. Wear suitable protective clothing and gloves.

8.2.3. Environmental exposure controls

Siehe Abschnitt 7. Es sind keine darüber hinausgehenden Maßnahmen erforderlich.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state: Liquid Odour: not determined Colour: colourless

Safety relevant basis data

parameter		at °C	Method	Remark
рН	≈ 11	20 °C		
Melting point	not determined			
Freezing point	not determined			
Initial boiling point and boiling range	≈ 100 °C			
Decomposition temperature	not determined			
Flash point	not determined			
Evaporation rate	not determined			
Auto-ignition temperature	not determined			
Upper/lower flammability or explosive limits	not determined			
Vapour pressure	not determined			
Vapour density	not determined			
Density	1.13 g/cm ³	20 °C	ISO 2811, part 2	
Relative density	not determined			
Bulk density	not determined			
Water solubility	completely miscible	20 °C		
Partition coefficient: n-octanol/ water	not determined			
Dynamic viscosity	not determined			
Kinematic viscosity	not determined			

9.2. Other information

No data available

according to REACH Regulation UK SI 2019/758, as amended, and UK SI 2020/1577

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SECTION 10: Stability and reactivity

10.1. Reactivity

No hazardous reaction when handled and stored according to provisions. The product itself does not burn.

10.2. Chemical stability

The product is chemically stable under recommended conditions of storage, use and temperature.

10.3. Possibility of hazardous reactions Exothermic reaction with: Acid

10.4. Conditions to avoid

See section 7. No additional measures necessary.

10.5. Incompatible materials

Materials to avoid: Acid, Light metals (Formation of: Hydrogen)

10.6. Hazardous decomposition products

No known hazardous decomposition products. In case of fire: Gases/vapours, toxic

SECTION 11: Toxicological information

Substance name	Toxicological information		
Silicic acid, potassium salt CAS No.: 1312-76-1 EC No.: 215-199-1	LD50 oral: >2,000 mg/kg (Rat) LD50 dermal: >5,000 mg/kg (rat) EPA OPPTS 870.1200 (Acute Dermal Toxicity) LC50 Acute inhalation toxicity (vapour): >2.06 mg/l 4 h (rat) EPA OPPTS 870.1300 (Acute inhalation toxicity)		
ootassium methylsilanetriolate CAS No.: 31795-24-1 EC No.: 250-807-9	LD ₅₀ oral: >2,000 mg/kg (Rat)		
lithium hydroxide CAS No.: 1310-66-3	LD ₅₀ oral: 210 mg/kg (Ratte) LD ₅₀ dermal: >2,000 mg/kg (rat) LC ₅₀ Acute inhalation toxicity (dust/mist): >3.4 mg/l 4 h (rat)		

Acute oral toxicity:

not determined Acute dermal toxicity:

not determined

Acute inhalation toxicity: not determined

Skin corrosion/irritation: Causes skin irritation.

Serious eye damage/irritation:

Causes serious eye irritation.

Respiratory or skin sensitisation: not determined

Germ cell mutagenicity:

not determined

Carcinogenicity: not determined

Reproductive toxicity:

not determined

according to REACH Regulation UK SI 2019/758, as amended, and UK SI 2020/1577

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STOT-single exposure: not determined STOT-repeated exposure: not determined

Aspiration hazard:

not determined

11.2. Information on other hazards No data available

SECTION 12: Ecological information

12.1. Toxicity

Substance name Toxicological information	
Silicic acid, potassium salt	EC₅₀: >146 mg/l (Daphnia pulex (water flea))
CAS No.: 1312-76-1 EC No.: 215-199-1	LC ₅₀ : >146 mg/l 2 d (Leuciscus idus (golden orfe))
	LC ₅₀ : >146 mg/l 2 d (fish, Leuciscus idus) DIN 38412,
	Teil 15 (Golden orfe, acute toxicity test). The German standard method for the examination of water, waste water and sludge; bioassays (group L); determination of the effect of substances in water on fish-fish test which corresponds to OECD 203
	EC50: 207 mg/l 3 d (Algae/water plant, Desmodesmu s subspicatus (previous name: Scenedesmus subspic atus)) DIN 38412, Teil 9 (Algal growth inhibition test), German National Guideline; the method conforms with OECD 201
potassium methylsilanetriolate	LC ₅₀ : >500 mg/l 4 d (Danio rerio (zebrafish)) OECD 203
CAS No.: 31795-24-1 EC No.: 250-807-9	EC₅₀: >100 mg/l 2 d (Daphnia magna (Big water flea)) OECD 202
	EC₅₀: >120 mg/l 3 d (Pseudokirchneriella subcapitata) OECD 201

12.2. Persistence and degradability

Substance name	Biodegradation	Remark
potassium methylsilanetriolate CAS No.: 31795-24-1 EC No.: 250-807-9	Yes, slowly	

12.3. Bioaccumulative potential

Substance name	Log K _{OW}	Bioconcentration factor (BCF)
potassium methylsilanetriolate	2.7	
CAS No.: 31795-24-1		
EC No.: 250-807-9		

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

Substance name	Results of PBT and vPvB assessment
Silicic acid, potassium salt CAS No.: 1312-76-1 EC No.: 215-199-1	
potassium methylsilanetriolate CAS No.: 31795-24-1 EC No.: 250-807-9	This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

12.6. Endocrine disrupting properties

No data available

according to REACH Regulation UK SI 2019/758, as amended, and UK SI 2020/1577

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12.7. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

13.1.1. Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

Waste code product:

06 02 05 * other bases

*: Evidence for disposal must be provided.

Waste code packaging:

15 01 10 * packaging containing residues of or contaminated by dangerous substances

*: Evidence for disposal must be provided.

Waste treatment options

Appropriate disposal / Product:

Entsorgung gemäß den behördlichen Vorschriften. Wegen einer Abfallentsorgung den zuständigen zugelassenen Entsorger ansprechen.

Appropriate disposal / Package:

Completely emptied packages can be recycled.

SECTION 14: Transport information

No dangerous good in sense of these transport regulations.

Land transport (ADR/ RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	Air transport (ICAO- TI / IATA-DGR)
14.1. UN number o	r ID number		
No dangerous good in sense of these transport regulations.			
14.2. UN proper shi	pping name		
No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.
14.3. Transport haz	ard class(es)		
not relevant			

14.4. Packing group

not relevant

14.5. Environmental hazards

not relevant

14.6. Special precautions for user

not relevant

14.7. Maritime transport in bulk according to IMO instruments not relevant

according to REACH Regulation UK SI 2019/758, as amended, and UK SI 2020/1577

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SECTION 15: Regulatory information

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

15.1.1. EU legislation

Other regulations (EU):

2008/98/EC , 2001/118/EC, 1999/13/EC, 2004/42/EC, (EC) No. 1907/2006, (EU) 2015/830, 75/324/EEC, 2008/47/EC, (EC) No. 1272/2008, 2008/68/EC, (EC) No. 648/2004

This product meets the requirements of Regulation (EC) No. 1935/2004 on the limitation of VOC content. Information on Directive 1999/13 / EC on the limitation of emissions of volatile organic compounds (VOC-RL): VOC (in g / L): 0

VOC EU Limit (2004/42/EG) (cat. IIA/h): 30 g/L, VOC-value 0 g/L

This product meets the requirements of Regulation (EC) No. 1935/2004 on the limitation of VOC content.

15.1.2. National regulations

No data available

15.2. Chemical Safety Assessment

No data available

SECTION 16: Other information

16.1. Indication of changes

No data available

16.2. Abbreviations and acronyms

See overview table at www.euphrac.eu

16.3. Key literature references and sources for data

No data available

Substance name	Туре	source of supply
Silicic acid, potassium salt CAS No.: 1312-76-1 EC No.: 215-199-1	LD_{50} dermal; LC_{50} Acute inhalation toxicity (vapour); LC_{50} ; EC_{50}	Source: European Chemicals Agency, http://echa.europa.eu/
lithium hydroxide CAS No.: 1310-66-3	LD ₅₀ dermal; LC ₅₀ Acute inhalation toxicity (dust/mist)	Source: European Chemicals Agency, http://echa.europa.eu/

16.4. Classification for mixtures and used evaluation method according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567

Classification according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567:

Hazard classes and hazard categories	Hazard statements	Classification pro cedure
Skin corrosion/irritation (Skin Irrit. 2)	H315: Causes skin irritation.	
Serious eye damage/eye irritation (Eye Irrit. 2)	H319: Causes serious eye irritation.	

16.5. Relevant R-, H- and EUH-phrases (Number and full text)

Hazard statements	
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

16.6. Training advice

No data available

according to REACH Regulation UK SI 2019/758, as amended, and UK SI 2020/1577

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16.7. Additional information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.