

Reference material for composition analysis of lithium carbonate



Version : V2.0.0.1

Report No. : BWS0428-2016-MSDS-EP

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***Prepared in accordance with EU REACH Regulation (REACH 1907/2006 with amendment 2020/878)**

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

1.1 Product identifier

Product Name	Reference material for composition analysis of lithium carbonate
Cat No.	BWS0428-2016
CAS No.	Not applicable
EC No.	Not applicable
Molecular Formula	Not applicable
REACH Registration Number	-
UFI	No information available

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Please consult manufacturer.
Uses advised against	Please consult manufacturer.

1.3 Details of the supplier of the Safety Data Sheet

Name of the company	Weiyel Inc
Address of the company	Hedian Light Industrial Park, Chengguan Town, Shangcheng County, Xinyang City, Henan Province, China
Post code	465350
Telephone number	010-58103678
Fax number	010-84840368
E-mail address	info@weiyel.com

1.4 Emergency telephone number


Emergency telephone number	010-58103678
Opening hours	24h

2 Hazards identification

2.1 CLP classification according to Regulation (EC) No. 1272/2008 with amendment 2023/707

Acute Toxicity - Oral	Category 4
Serious eye damage/irritation	Category 2

2.2 Label elements

Hazard pictograms	
Signal word	Warning

Hazard statements

H302	Harmful if swallowed
H319	Causes serious eye irritation

Precautionary statements

◆ Prevention

P264	Wash hands and other parts of the body (if related) thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

◆ Response

P330	Rinse mouth.
P301+P312	IF SWALLOWED: Call a POISON CENTRE/doctor if you feel unwell.
P337+P313	If eye irritation persists: Get medical advice/attention.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

◆ Storage

Storage	Not applicable
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◆ Disposal

P501	Dispose of contents/container in accordance with local/regional/national/international regulations.
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2.3 Other hazards

◆ Results of PBT and vPvB assessment

Component	Results of PBT and vPvB assessment [according to (EC) No 1907/2006]
Lithium carbonate	Not applicable
Calcium	Not applicable
Magnesium	Not PBT/vPvB
Iron	Not applicable
Nickel	Not applicable
Manganese	Not applicable
Copper	Not applicable
Aluminium	Not applicable
Zinc	Not applicable
Lead	Not applicable
Potassium	Insufficient information, temporarily unable to evaluate
Sodium	Not applicable

Silicon	Not applicable
Boron	Not applicable
Fluorine	Not applicable
Chlorine	Not PBT/vPvB
Potassium sulfate	Not applicable

◆ Results of endocrine disrupting properties assessment

Component	Results of endocrine disrupting properties assessment [according to (EU) No 2017/2100 or (EU) No 2018/605]
Lithium carbonate	Insufficient information, temporarily unable to evaluate
Calcium	Insufficient information, temporarily unable to evaluate
Magnesium	Insufficient information, temporarily unable to evaluate
Iron	Insufficient information, temporarily unable to evaluate
Nickel	Insufficient information, temporarily unable to evaluate
Manganese	Insufficient information, temporarily unable to evaluate
Copper	Insufficient information, temporarily unable to evaluate
Aluminium	Insufficient information, temporarily unable to evaluate
Zinc	Insufficient information, temporarily unable to evaluate
Lead	Insufficient information, temporarily unable to evaluate
Potassium	Insufficient information, temporarily unable to evaluate
Sodium	Insufficient information, temporarily unable to evaluate
Silicon	Insufficient information, temporarily unable to evaluate
Boron	Insufficient information, temporarily unable to evaluate
Fluorine	Insufficient information, temporarily unable to evaluate
Chlorine	Insufficient information, temporarily unable to evaluate
Potassium sulfate	Insufficient information, temporarily unable to evaluate

◆ Other

Not applicable.

3 Composition/information on ingredients

3.1 Substance

Not applicable

3.2 Mixture

Component	Weight % content(or range)	Classification according to Regulation (EC) No. 1272/2008 with amendment 2023/707 [CLP]	Specific Conc. Limits, M-factors
Lithium carbonate CAS : 554-13-2 EC : 209-062-5 Index No. : -	99.2944	Acute Toxicity - Oral, Category 4, H302; Serious eye damage/irritation, Category 2, H319	-
Calcium CAS : 7440-70-2	0.0173	Substances and mixtures which, in contact with water, emit flammable gases,	-

EC : 231-179-5 Index No. : 020-001-00-X		Category 2, H261	
Magnesium CAS : 7439-95-4 EC : 231-104-6 Index No. : 012-001-00-3	0.0112	Pyrophoric solids, Category 1, H250; Substances and mixtures which, in contact with water, emit flammable gases, Category 1, H260	-
Iron CAS : 7439-89-6 EC : 231-096-4 Index No. : -	0.00016	Not Classified	-
Nickel CAS : 7440-02-0 EC : 231-111-4 Index No. : 028-002-00-7	0.0001	Sensitization - skin, Category 1, H317; Carcinogenicity, Category 2, H351; Specific target organ toxicity - repeated exposure, Category 1, H372	-
Manganese CAS : 7439-96-5 EC : 231-105-1 Index No. : -	0.0001	Not Classified	-
Copper CAS : 7440-50-8 EC : 231-159-6 Index No. : 029-026-00-0	0.0001	Hazardous to the aquatic environment - short-term (acute) hazard, Category 1, H400; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 1, H410	M=10;M(Chronic)=1
Aluminium CAS : 7429-90-5 EC : 231-072-3 Index No. : 013-001-00-6	0.00015	Pyrophoric solids, Category 1, H250; Substances and mixtures which, in contact with water, emit flammable gases, Category 2, H261	-
Zinc CAS : 7440-66-6 EC : 231-175-3 Index No. : 030-001-00-1	0.0001	Pyrophoric solids, Category 1, H250; Substances and mixtures which, in contact with water, emit flammable gases, Category 1, H260; Hazardous to the aquatic environment - short-term (acute) hazard, Category 1, H400; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 1, H410	-
Lead CAS : 7439-92-1 EC : 231-100-4 Index No. : 082-013-00-1	0.0002	Reproductive toxicity, Category 1A, H360; Reproductive Toxicity - effects on or via lactation, Additional, H362; Hazardous to the aquatic environment - short-term (acute) hazard, Category 1, H400; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 1, H410	H360A:C ≥ 0.03%;M=10;M(Chronic)= 100
Potassium CAS : 7440-09-7 EC : 231-119-8 Index No. : 019-001-00-2	0.0005	Substances and mixtures which, in contact with water, emit flammable gases, Category 1, H260; Skin corrosion/irritation, Category 1B, H314; Reacts violently with water, EUH014	-
Sodium CAS : 7440-23-5 EC : 231-132-9 Index No. : 011-001-00-0	0.0271	Substances and mixtures which, in contact with water, emit flammable gases, Category 1, H260; Skin corrosion/irritation, Category 1B, H314; Reacts violently with water, EUH014	-
Silicon CAS : 7440-21-3 EC : 231-130-8 Index No. : -	0.004	Not Classified	-
Boron CAS : 7440-42-8 EC : 231-151-2 Index No. : -	0.0205	Not Classified	-

Fluorine CAS : 7782-41-4 EC : 231-954-8 Index No. : 009-001-00-0	0.0004	Oxidizing gases, Category 1, H270; Gases under pressure, Compressed gas, H280; Skin corrosion/irritation, Category 1A, H314; Acute Toxicity - Inhalation, Category 2, H330	-
Chlorine CAS : 7782-50-5 EC : 231-959-5 Index No. : 017-001-00-7	0.00189	Oxidizing gases, Category 1, H270; Gases under pressure, Liquefied gas, H280; Skin Corrosion/Irritation, Category 2, H315; Serious eye damage/irritation, Category 2, H319; Acute Toxicity - Inhalation, Category 3, H331; Specific target organ toxicity - single exposure; respiratory tract irritation, Category 3, H335; Hazardous to the aquatic environment - short-term (acute) hazard, Category 1, H400	M=100
Potassium sulfate CAS : 7778-80-5 EC : 231-915-5 Index No. : -	0.0012	Not Classified	-
Acid Insoluble Matter CAS : / EC : - Index No. : -	0.003	No information available	-
Moisture CAS : / EC : - Index No. : -	0.04	No information available	-
Loss on Ignition CAS : / EC : - Index No. : -	0.49	No information available	-
Magnetic Foreign Matter CAS : / EC : - Index No. : -	0.0876	No information available	-
D10 CAS : / EC : - Index No. : -	0	No information available	-
D50 CAS : / EC : - Index No. : -	0	No information available	-
D90 CAS : / EC : - Index No. : -	0	No information available	-

4 First-aid measures

4.1 Description of first aid measures

General advice	Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.
Eye contact	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
Skin contact	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
Ingestion	Rinse mouth. Give plenty of water to drink. Refer for medical attention.
Inhalation	Fresh air, rest. Refer for medical attention.

Protecting of first-aiders	Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.
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4.2 Most important symptoms/effects, acute and delayed

1	Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.
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4.3 Indication of any immediate medical attention and special treatment needed

1	Treat symptomatically.
2	Symptoms may be delayed.

5 Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media	Use extinguishing media suitable for surrounding area.
Unsuitable extinguishing media	There is no restriction on the type of extinguisher which may be used.

5.2 Specific hazards arising from the substance or mixture

1	Development of hazardous combustion gases or vapor possible in the event of fire.
2	May expansion or decompose explosively when heated or involved in fire.

5.3 Advice for firefighters

1	As in any fire, wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear.
2	Fight fire from a safe distance, with adequate cover.
3	Prevent fire extinguishing water from contaminating surface water or the ground water system.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

1	Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.
2	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
3	Use personal protective equipment, do not breathe dust/fume.

6.2 Environmental precautions

1	Prevent further leakage or spillage if safe to do so.
2	Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

1	Cut off the source of the leak as much as possible.
2	Keep leaks in a ventilated place.
3	Isolation of contaminated areas and restrictions on access.
4	It is recommended that emergency personnel wear dust masks.
5	Collect the spill with a clean shovel and place it in a clean, dry, loosely closed container and move the container away from the leak.
6	Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

6.4 Reference to other sections

1	Personal Protective Equipment advice is contained in Section 8 of the SDS.
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2	Disposal considerations advice is contained in Section 13 of the SDS.
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7 Handling and storage

7.1 Precautions for safe handling

◆ Protective measures

1	Handling is performed in a well ventilated place.
2	Wear suitable protective equipment.
3	Avoid contact with skin and eyes.

◆ Measures to prevent fire

1	Keep away from heat/sparks/open flames/ hot surfaces.
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◆ Measures to prevent aerosol and dust generation

1	Avoid formation of dust and aerosols.
2	Provide appropriate exhaust ventilation at places where dust is formed.

◆ Advice on general occupational hygiene

1	Wash hands and face after using the substances.
2	Replace the contaminated clothing immediately.

7.2 Conditions for safe storage, including any incompatibilities

1	Keep containers tightly closed.
2	Keep containers in a dry, cool and well-ventilated place.
3	Keep away from heat/sparks/open flames/hot surfaces.
4	Store away from incompatible materials and foodstuff containers.

7.3 Specific end use(s)

1	In addition to use mentioned in the Section 1.2, unforeseen other specific end uses.
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8 Exposure controls/personal protection

8.1 Control parameters

◆ Occupational exposure limit values

Component	Country/Region	Limit value - Eight hours		Limit value - Short term	
		ppm	mg/m ³	ppm	mg/m ³
Nickel	Japan - JSOH(2024–2025)	-	1	-	-
	Permissible exposure standards for workers in the workplace	-	1	-	2
	France	-	1	-	-
	Germany (AGS)	-	0.006	-	0.048
	United Kingdom	-	-	-	3
	Austria	-	0.5	-	2
Manganese	Japan - JSOH(2024–2025)	-	0.02(respirable particles, as	-	-

	5)		Mn)		
	Japan - JSOH(2024–2025)	-	0.1(total particulate, as Mn)	-	-
	Permissible exposure standards for workers in the workplace	-	1(fume)	-	2(fume)
	European Union	-	0.2	-	-
	France	-	0.2	-	-
	Germany (AGS)	-	0.02	-	0.16
Copper	Permissible exposure standards for workers in the workplace	-	1(dust and mist)	-	2(dust and mist)
	Permissible exposure standards for workers in the workplace	-	0.2(fume)	-	0.6(fume)
	France	-	0.2(fume, respirable fraction)	-	-
	Germany (DFG)	-	0.01	-	0.02
	United Kingdom	-	1(dusts and mists)	-	2
	Austria	-	1(inhalable aerosol)	-	-
Aluminium	Japan - JSOH(2024–2025)	-	0.5(respirable dust)	-	-
	Japan - JSOH(2024–2025)	-	2(total dust)	-	-
	Permissible exposure standards for workers in the workplace	-	5(respirable dust)	-	10(respirable dust)
	France	-	10(inhalable aerosol)	-	-
	Germany (DFG)	-	4	-	-
	United Kingdom	-	10(inhalable fraction);4(respirable fraction)	-	-
Zinc	Germany (DFG)	-	2	-	4
	Switzerland	-	0.1(respirable aerosol)	-	0.4(respirable aerosol)
Lead	Japan - JSOH(2024–2025)	-	0.03(as Pb)	-	-
	Permissible exposure standards for	-	0.05	-	0.15

	workers in the workplace				
	European Union	-	0.15	-	-
	France	-	0.1(inhalable aerosol)	-	-
	Germany (AGS)	-	0.15	-	-
	Germany (DFG)	-	0.004	-	0.032
Silicon	France	-	10(inhalable aerosol)	-	-
	United Kingdom	-	10(inhalable fraction);4(respirable fraction)	-	-
	Belgium	-	10	-	-
	Denmark	-	10(inhalable aerosol)	-	20(inhalable aerosol)
	Ireland	-	10	-	-
	New Zealand	-	10	-	-
Boron	Germany (DFG)	-	0.75	-	0.75
Fluorine	Permissible exposure standards for workers in the workplace	1	1.6	2	3.2
	European Union	1	1.58	2	3.16
	France	1	1.58	2	3.16
	Germany (AGS)	1	1.6	2	3.2
	Italy	1	1.58	2	3.16
	United Kingdom	1	1.6	1	1.6
Chlorine	Japan - JSOH(2024-2025)	-	-	-	-
	Permissible exposure standards for workers in the workplace	-	-	-	-
	European Union	-	-	0.5	1.5
	France	-	-	0.5	1.5
	Germany (AGS)	0.5	1.5	0.5	1.5
	Germany (DFG)	0.5	1.5	0.5	1.5

◆ Biological limit values

Component	Standard	Biological monitoring index	Biological limits value	Sampling time	Remark
Nickel	USA -ACGIH	Nickel(Urine)	5µg/L	End of shift at end of work week	
Lead	SCOEL(EU)	Not strictly regulated	0.3mg/L	Not strictly regulated	

		Lead(Blood)	200µg/L	Not critical	
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◆ Monitoring methods

1	EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
2	GBZ/T 300 and GBZ/T 160 series standard Determination of toxic substances in workplace air.

◆ Derived No effect level (DNEL)

Component	Route of exposure	DNEL for Workers			
		Acute effects (local)	Acute effects (systemic)	Chronic effects (local)	Chronic effects (systemic)
Lithium carbonate	Inhalation	No data available	No data available	No data available	10 mg/m ³
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Calcium	Inhalation	No data available	No data available	1 mg/m ³	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Magnesium	Inhalation	No data available	No data available	10 mg/m ³	10 mg/m ³
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Iron	Inhalation	No data available	No data available	3 mg/m ³	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Nickel	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Manganese	Inhalation	No data available	No data available	No data available	0.0101 mg/m ³
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Copper	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Aluminium	Inhalation	No data available	No data available	3.72 mg/m ³	3.72 mg/m ³
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Zinc	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Lead	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available

Potassium	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Sodium	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Silicon	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Boron	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Fluorine	Inhalation	No data available	No data available	1.58 mg/m ³	1.58 mg/m ³
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Chlorine	Inhalation	No data available	No data available	0.75 mg/m ³	0.75 mg/m ³
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Potassium sulfate	Inhalation	No data available	No data available	No data available	37.6 mg/m ³
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Acid Insoluble Matter	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Moisture	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Loss on Ignition	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Magnetic Foreign Matter	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
D10	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
D50	Inhalation	No data available	No data available	No data available	No data available

	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
D90	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available

◆ Predicted No Effect Concentration (PNEC)

Component	A	B	C	D	E	F	G	H
Lithium carbonate	9 mg/L	900 µg/L	122.2 mg/L	238.4 mg/kg sediment dw	23.84 mg/kg sediment dw	No hazard identified	44.11 mg/kg soil dw	No potential for bioaccumulation
Calcium	No data available	No data available	No data available	No data available	No data available	No hazard identified	No data available	No potential for bioaccumulation
Magnesium	410 - 2000 µg/L	410 - 26500 µg/L	10.8 mg/L	87.8 - 268 mg/kg sediment dw	8.78 - 268 mg/kg sediment dw	10 mg/m ³	28.7 - 268 mg/kg soil dw	212 mg/kg food
Iron	No data available	No data available	No data available	No data available	No data available	No hazard identified	No data available	No data available
Manganese	22 - 34 µg/L	2.2 - 3.4 µg/L	100 mg/L	108 - 3300 µg/kg sediment dw	10.8 - 340 µg/kg sediment dw	No hazard identified	8.74 - 3400 µg/kg soil dw	No potential for bioaccumulation
Copper	6.3 µg/L	5.2 µg/L	230 µg/L	87 mg/kg sediment dw	676 mg/kg sediment dw	No hazard identified	65 mg/kg soil dw	No potential for bioaccumulation
Aluminium	No data available	No data available	20 mg/L	No data available	No data available	No hazard identified	No data available	No data available
Zinc	14.4 µg/L	7.2 µg/L	100 µg/L	146.9 mg/kg sediment dw	162.2 mg/kg sediment dw	No hazard identified	83.1 mg/kg soil dw	No potential for bioaccumulation
Lead	2.4 µg/L	3.3 µg/L	100 µg/L	186 mg/kg sediment dw	168 mg/kg sediment dw	No hazard identified	212 mg/kg soil dw	10.9 mg/kg food
Sodium	No data available	No data available	No data available	No data available	No data available	No hazard identified	No data available	No data available
Silicon	No data available	No data available	No data available	No data available	No data available	No data available	No data available	No potential for bioaccumulation

Boron	2.9 mg/L	2.9 mg/L	10 mg/L	No data available	No data available	No hazard identified	5.7 mg/kg soil dw	No potential for bioaccumulation
Fluorine	900 µg/L	900 µg/L	51 mg/L	3.52 mg/kg sediment dw	3.52 mg/kg sediment dw	No hazard identified	11 mg/kg soil dw	No potential for bioaccumulation
Chlorine	210 ng/L	42 ng/L	30 µg/L	No data available	No data available	No data available	No data available	11.1 mg/kg food
Potassium sulfate	680 µg/L	68 µg/L	10 mg/L	No data available	No data available	No data available	No data available	No potential for bioaccumulation

Note 1:

A: Freshwater; B: Seawater; C: Sewage treatment plant; D: Sediment (freshwater); E: Sediment (seawater); F: Air; G: Soil; H: Secondary poisoning(Hazard for Predators).

Note 2:

The PNEC values of the remaining components not shown in the product are not available yet.

8.2 Exposure controls

8.2.1 Engineering controls

1	Ensure adequate ventilation, especially in confined areas.
2	Ensure that eyewash stations and safety showers are close to the workstation location.
3	Use explosion-proof electrical/ventilating/lighting/equipment.
4	Set up emergency exit and necessary risk-elimination area.

8.2.2 Personal protection equipment

General requirement	
Eye protection	Must wear appropriate safety goggles.
Hand protection	Must wear appropriate chemical protective gloves.
Respiratory protection	Must wear appropriate personal respiratory protective equipment.
Skin and body protection	Must wear appropriate chemical protective clothing and chemical resistant shoes.

8.2.3 Environmental exposure controls

Environmental exposure controls	No information available
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9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	white or colorless crystalline powder
Colour	white or colorless crystalline powder
Odor	No information available
Odor threshold	No information available

pH	10~11 (20°C, 5g/L, Calculated,Lithium carbonate)
Melting point/freezing point(°C)	723 (Lithium carbonate)
Initial boiling point and boiling range(°C)	1310 (Decompose,Lithium carbonate)
Flash point(Closed cup,°C)	Not applicable
Evaporation rate	Not applicable
Flammability	No information available
Upper/lower explosive limits[%(v/v)]	Upper limit : No information available ; Lower limit : No information available
Vapor pressure	Not applicable
Vapor density(Air = 1)	Not applicable
Relative density(Water=1)	2.1 (Lithium carbonate)
Solubility	Slightly soluble in water (Lithium carbonate)
n-octanol/water partition coefficient	No information available
Auto-ignition temperature(°C)	No information available
Decomposition temperature(°C)	1310 (Lithium carbonate)
Kinematic viscosity	Not applicable
Explosive properties	No information available
Oxidizing properties	No information available
Particle characteristics	No information available

9.2 Other information

9.2.1 Information with regard to physical hazard classes

Information with regard to physical hazard classes	No information available
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9.2.2 Other safety characteristics

Other safety characteristics	No information available
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10 Stability and reactivity

Stability and reactivity

10.1 Reactivity	Contact with incompatible substances can cause decomposition or other chemical reactions.
10.2 Chemical stability	Stable under proper operation and storage conditions.
10.3 Possibility of hazardous reactions	No information available.
10.4 Conditions to avoid	Incompatible materials, heat, flame and spark.
10.5 Incompatible materials	Water, carbon dioxide, oxidants, halogen, interhalogen and mercury. Halogen, interhalogen, strong oxidant, water and acids. Oxidants, halogen, interhalogen and mercury. Water, carbon dioxide, halocarbon, halogen, interhalogen, metal halide, non-metal oxides, acids, mercury and hydrazine. Metal acetylide, halogen, interhalogen, halogen oxides, nitric acid, nitrous oxide, nitrates, nitrites, halogen oxyacid salts, chromates, permanganates, inorganic peroxides, metal oxides and peroxyformic acid. Water, alkanes, alkynes, aromatic hydrocarbon, halogenated alkanes, oxygen-containing organic compounds, metals, metal hydride, non-metallic hydride, non-metal and metal acetylide, carbonated compounds, azides, nitrogen compounds, caustic, nonmetal oxide and sulfide.

10.6 Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
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11 Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008 with amendment 2023/707

Reference material for composition analysis of lithium carbonate

Skin corrosion/irritation	Based on available data, the classification criteria are not met
Serious eye damage/irritation	Causes serious eye irritation(Category 2)
Skin sensitization	Based on available data, the classification criteria are not met
Respiratory sensitization	Based on available data, the classification criteria are not met
Reproductive toxicity	Based on available data, the classification criteria are not met
STOT-single exposure	Based on available data, the classification criteria are not met
STOT-repeated exposure	Based on available data, the classification criteria are not met
Aspiration hazard	Based on available data, the classification criteria are not met
Germ cell mutagenicity	Based on available data, the classification criteria are not met

Acute toxicity

Component	LD ₅₀ (oral)	LD ₅₀ (dermal)	LC ₅₀ (inhalation,4h)
Fluorine	No information available	No information available	92.5ppmV(Rat)
Boron	650mg/kg(Rat)	No information available	No information available
Silicon	3160mg/kg(Rat)	No information available	No information available
Lithium carbonate	525mg/kg(Rat)	No information available	No information available
Manganese	9000mg/kg(Rat)	No information available	No information available
Chlorine	No information available	No information available	146.5ppmV(Rat)
Potassium sulfate	6600mg/kg(Rat)	No information available	No information available
Iron	30000mg/kg(Rat)	No information available	No information available

Carcinogenicity

Component	List of carcinogens by the IARC Monographs	Report on Carcinogens by NTP
Lithium carbonate	Not Listed	Not Listed
Calcium	Not Listed	Not Listed
Magnesium	Not Listed	Not Listed
Iron	Not Listed	Not Listed
Nickel	Category 2B	Category R
Manganese	Not Listed	Not Listed
Copper	Not Listed	Not Listed
Aluminium	Not Listed	Not Listed
Zinc	Not Listed	Not Listed
Lead	Category 2B	Category R

Potassium	Not Listed	Not Listed
Sodium	Not Listed	Not Listed
Silicon	Not Listed	Not Listed
Boron	Not Listed	Not Listed
Fluorine	Not Listed	Not Listed
Chlorine	Not Listed	Not Listed
Potassium sulfate	Not Listed	Not Listed
Acid Insoluble Matter	Not Listed	Not Listed
Moisture	Not Listed	Not Listed
Loss on Ignition	Not Listed	Not Listed
Magnetic Foreign Matter	Not Listed	Not Listed
D10	Not Listed	Not Listed
D50	Not Listed	Not Listed
D90	Not Listed	Not Listed

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

Component	Endocrine disrupting properties
Lithium carbonate	No information available
Calcium	No information available
Magnesium	No information available
Iron	No information available
Nickel	No information available
Manganese	No information available
Copper	No information available
Aluminium	No information available
Zinc	No information available
Lead	No information available
Potassium	No information available
Sodium	No information available
Silicon	No information available
Boron	No information available
Fluorine	No information available
Chlorine	No information available
Potassium sulfate	No information available

11.2.2 Other Information

Other Information	See Section 11.1
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12 Ecological information

12.1 Toxicity

Acute aquatic toxicity

Component	Fish	Crustaceans	Algae or other aquatic plants
Lead	LC ₅₀ : 2.8mg/L (96h)(Fish)	No information available	No information available
Zinc	LC ₅₀ : 2.01mg/L (96h)(Fish)	EC ₅₀ : 1.33mg/L (48h)(Crustaceans)	No information available
Magnesium	LC ₅₀ : 541mg/L (96h)(Fish)	No information available	No information available
Silicon	LC ₅₀ : 100mg/L (96h)(Fish)	No information available	No information available
Calcium	No information available	EC ₅₀ : 49.1mg/L (48h)(Crustaceans)	No information available
Aluminium	LC ₅₀ : 1.55mg/L (96h)(Fish)	No information available	No information available
Lithium carbonate	LC ₅₀ : 30.3mg/L (96h)(Fish)	EC ₅₀ : 33.2mg/L (48h)(Crustaceans)	ErC ₅₀ : > 400mg/L (72h)(Algae)
Manganese	LC ₅₀ : 1800mg/L (96h)(Fish)	EC ₅₀ : 40mg/L (48h)(Crustaceans)	No information available
Chlorine	LC ₅₀ : 0.06mg/L (96h)(Fish)	No information available	No information available
Potassium sulfate	LC ₅₀ : 680mg/L (96h)(Fish)	No information available	No information available
Iron	LC ₅₀ : 1.29mg/L (96h)(Fish)	No information available	No information available
Nickel	LC ₅₀ : 40mg/L (96h)(Fish)	EC ₅₀ : 1mg/L (48h)(Crustaceans)	No information available
Copper	LC ₅₀ : 0.665mg/L (96h)(Fish)	EC ₅₀ : 0.02mg/L (48h)(Crustaceans)	ErC ₅₀ : 7.9mg/L (96h)(Algae)

Chronic aquatic toxicity

Component	Fish	Crustaceans	Algae or other aquatic plants
Fluorine	NOEC : 4mg/L(Fish)	No information available	No information available
Lithium carbonate	NOEC : 17.35mg/L(Fish)	No information available	No information available

12.2 Persistence and degradability

Component	Persistence (water/soil)	Persistence (air)
Lithium carbonate	Low	Low
Nickel	Low	Low

12.3 Bioaccumulative potential

Component	Bioaccumulative potential	Comments
Lithium carbonate	Low	Log Kow=-0.4605
Nickel	Low	Log Kow=-1.38

12.4 Mobility in soil

Component	log Koc	Remark
Lithium carbonate	0.000	
Magnesium	1.12	20 °C
Nickel	1.155	
Silicon	1.00	20 °C
Fluorine	0.5	

12.5 Results of PBT and vPvB assessment

Component	Results of PBT and vPvB assessment [according to (EC) No 1907/2006]
Lithium carbonate	Not applicable
Calcium	Not applicable
Magnesium	Not PBT/vPvB
Iron	Not applicable
Nickel	Not applicable
Manganese	Not applicable
Copper	Not applicable
Aluminium	Not applicable
Zinc	Not applicable
Lead	Not applicable
Potassium	Insufficient information, temporarily unable to evaluate
Sodium	Not applicable
Silicon	Not applicable
Boron	Not applicable
Fluorine	Not applicable
Chlorine	Not PBT/vPvB
Potassium sulfate	Not applicable

12.6 Endocrine disrupting properties

Component	Endocrine disrupting properties
Lithium carbonate	No information available
Calcium	No information available
Magnesium	No information available
Iron	No information available
Nickel	No information available
Manganese	No information available
Copper	No information available
Aluminium	No information available

Zinc	No information available
Lead	No information available
Potassium	No information available
Sodium	No information available
Silicon	No information available
Boron	No information available
Fluorine	No information available
Chlorine	No information available
Potassium sulfate	No information available

12.7 Other adverse effects

	No information available
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13 Disposal considerations

13.1 Waste treatment methods

Waste chemicals	Before disposal should refer to the relevant national and local laws and regulation. Recommend the use of incineration disposal.
Contaminated packaging	Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible.
Disposal recommendations	Refer to section waste chemicals and contaminated packaging.

14 Transport information

Label and Mark

Transporting Label	Not applicable
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IMDG-CODE

IMDG-CODE	NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
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IATA-DGR

IATA-DGR	NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
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UN-ADR

UN-ADR	NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
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Special precautions for user

	Transport vehicles should be equipped with the appropriate variety and quantity of fire equipment and emergency equipment leakage during transport. Before transport, should be preceded by checking whether container integrity, sealing. The transport unit must be placarded and marked in accordance with relevant transporting requirements.
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Maritime transport in bulk according to IMO instruments

- ◆ Transport in bulk according to Annex II of MARPOL and the IBC code

	Not Available
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- ◆ Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

	Not Available
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◆ Transport in bulk in accordance with the IGC Code

Not Available

15 Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****International chemical inventory**

Component	A	B	C	D	E	F	G	H	I	J	K	L	M
Lithium carbonate	√	√	√	√	√	√	√	√	√	√	√	√	√
Calcium	√	√	√	√	√	√	√	√	×	√	√	√	√
Magnesium	√	√	√	√	√	√	√	√	×	√	√	√	√
Iron	√	√	√	√	√	√	√	√	×	√	√	√	√
Nickel	√	√	√	√	√	√	√	√	×	√	√	√	√
Manganese	√	√	√	√	√	√	√	√	×	√	√	√	√
Copper	√	√	√	√	√	√	√	√	×	√	√	√	√
Aluminium	√	√	√	√	√	√	√	√	×	√	√	√	√
Zinc	√	√	√	√	√	√	√	√	×	√	√	√	√
Lead	√	√	√	√	√	√	√	√	×	√	√	√	√
Potassium	√	√	√	√	√	√	√	√	×	×	√	√	√
Sodium	√	√	√	√	√	√	√	√	×	√	√	√	√
Silicon	√	√	√	√	√	√	√	√	×	√	√	√	√
Boron	√	√	√	√	√	√	√	√	×	√	√	√	√
Fluorine	√	√	√	√	√	√	√	√	×	√	√	√	√
Chlorine	√	√	√	√	√	√	√	√	×	√	√	√	√
Potassium sulfate	√	√	√	√	√	√	√	√	√	√	√	√	√
Acid Insoluble Matter	×	×	×	×	×	×	×	×	×	×	×	×	×
Moisture	×	×	×	×	×	×	×	×	×	×	×	×	×
Loss on Ignition	×	×	×	×	×	×	×	×	×	×	×	×	×
Magnetic Foreign Matter	×	×	×	×	×	×	×	×	×	×	×	×	×
D10	×	×	×	×	×	×	×	×	×	×	×	×	×
D50	×	×	×	×	×	×	×	×	×	×	×	×	×
D90	×	×	×	×	×	×	×	×	×	×	×	×	×

- [A] China Inventory of Existing Chemical Substances(IECSC)
 [B] European Inventory of Existing Commercial Chemical Substances(EC inventory)
 [C] United States Toxic Substances Control Act Inventory(TSCA)
 [D] Canadian Domestic Substances List(DSL)
 [E] New Zealand Inventory of Chemicals(NZIoC)
 [F] Philippines Inventory of Chemicals and Chemical Substances(PICCS)
 [G] Korea Existing Chemicals Inventory(KECL)
 [H] Australian. Inventory of Industrial Chemical (AIICS)
 [I] Japan Inventory of Existing & New Chemical Substances(ENCS)
 [J] Thailand Existing Chemicals Inventory(TECI)

- 【K】 Mexico National Inventory of Chemical Substances (INSQ)
 【L】 Russia Inventory of Existing Substances (DRAFT)
 【M】 Inventory of Existing Chemical Substances in Taiwan, China (TCSI)

List of Chemical Substances under International Conventions

Component	A	B	C
Lithium carbonate	x	x	x
Calcium	x	x	x
Magnesium	x	x	x
Iron	x	x	x
Nickel	x	x	x
Manganese	x	x	x
Copper	x	x	x
Aluminium	x	x	x
Zinc	x	x	x
Lead	x	x	x
Potassium	x	x	x
Sodium	x	x	x
Silicon	x	x	x
Boron	x	x	x
Fluorine	x	x	x
Chlorine	x	x	x
Potassium sulfate	x	x	x
Acid Insoluble Matter	x	x	x
Moisture	x	x	x
Loss on Ignition	x	x	x
Magnetic Foreign Matter	x	x	x
D10	x	x	x
D50	x	x	x
D90	x	x	x

- 【A】 The Montreal Protocol on Substances that Deplete the Ozone Layer
 【B】 Stockholm Convention on Persistent Organic Pollutants (POPs)
 【C】 Rotterdam Convention on the prior informed consent procedure for certain hazardous chemicals and pesticides in international trade

European chemical inventory

Component	A	B	C	D	E	F	G	H	I
Lithium carbonate	x	x	x	√	√	x	x	x	x
Calcium	x	x	x	√	√	x	x	x	x
Magnesium	x	x	x	√	√	x	x	x	x
Iron	x	x	x	√	√	x	x	x	x

Nickel	x	x	√	√	√	x	√	x	x
Manganese	x	x	x	√	√	x	x	x	x
Copper	x	x	x	√	√	x	x	x	x
Aluminium	x	x	x	√	√	x	x	x	x
Zinc	x	x	x	√	√	x	x	x	x
Lead	√	x	√	√	√	x	√	x	x
Potassium	x	x	x	√	√	x	x	x	x
Sodium	x	x	x	√	√	x	x	x	x
Silicon	x	x	x	√	√	x	x	x	x
Boron	x	x	x	√	√	x	x	x	x
Fluorine	x	x	x	√	√	x	x	x	x
Chlorine	x	x	x	√	√	x	x	x	x
Potassium sulfate	x	x	x	√	√	x	x	x	x
Acid Insoluble Matter	x	x	x	x	x	x	x	x	x
Moisture	x	x	x	x	x	x	x	x	x
Loss on Ignition	x	x	x	x	x	x	x	x	x
Magnetic Foreign Matter	x	x	x	x	x	x	x	x	x
D10	x	x	x	x	x	x	x	x	x
D50	x	x	x	x	x	x	x	x	x
D90	x	x	x	x	x	x	x	x	x

- [A] Candidate list of Substances of Very High Concern for authorization under EU REACH regulation
 [B] Substances requiring authorisation under EU REACH regulation
 [C] Substances restricted under EU REACH
 [D] Pre-registered substances under EU REACH
 [E] Registered substances under EU REACH
 [F] Substance Evaluation – CoRAP under EU REACH
 [G] List of priority substances under EU water policy (Directive 2455/2001/EC)
 [H] Substances subject to POPs Regulation
 [I] Substances proposed as POPs

Note:

- “√” Indicates that the substance included in the regulations.
 “x” No data or not included in the regulations.

German water hazard class(WGK)

Component	WGK	Remark
Lithium carbonate	WGK 1	
Calcium	WGK 1	
Magnesium	nwg	
Iron	nwg	
Nickel	WGK 1	
Manganese	WGK 2	

Copper	WGK 2	
Aluminium	nwg	
Zinc	nwg	
Sodium	WGK 1	
Silicon	nwg	
Boron	nwg	
Fluorine	WGK 1	
Chlorine	WGK 2	The regular and professional use of this substance for drinking water treatment, surface water remediation or waste water treatment is not restricted by this classification.
Potassium sulfate	WGK 1	

- 【WGK 1】 slightly hazardous to water
 【WGK 2】 obviously hazardous to water
 【WGK 3】 highly hazardous to water
 【nwg】 non-hazardous to water
 【awg】 hazardous to water in general

German technical instructions on air quality control(TA LUFT)

Component	TA LUFT	Remark
Lithium carbonate	Chapter 5.2.1 Overall Dust, including fine dust. The emissions of dust in the exhaust gas are not allowed to exceed the following values: Mass flow: 0,20 kg/hr or Mass conc.: 20 mg/m ³ The mass per unit volume of 0,15 g/m ³ in exhaust gas is not allowed to be exceeded also on observance or lower deviation of a mass flow of 0,20 kg/h. For emission sources that exceed the mass flow rate of 0.40 kg/h, the mass concentration in waste gas the mass concentration must not exceed 10 mg/m ³ .	
Calcium	Chapter 5.2.1 Overall Dust, including fine dust. The emissions of dust in the exhaust gas are not allowed to exceed the following values: Mass flow: 0,20 kg/hr or Mass conc.: 20 mg/m ³ The mass per unit volume of 0,15 g/m ³ in exhaust gas is not allowed to be exceeded also on observance or lower deviation of a mass flow of 0,20 kg/h. For emission sources that exceed the mass flow rate of 0.40 kg/h, the mass concentration in waste gas the mass concentration must not exceed 10 mg/m ³ .	
Magnesium	Chapter 5.2.1 Overall Dust, including fine dust. The emissions of dust in the exhaust gas are not allowed to exceed the following	

	<p>values:Mass flow:0.20 kg/hr or Mass conc.:20 mg/m³ The mass per unit volume of 0.15 g/m³ in exhaust gas is not allowed to be exceeded also on observance or lower deviation of a mass flow of 0.20 kg/h.For emission sources that exceed the mass flow rate of 0.40 kg/h, the mass concentration in waste gas the mass concentration must not exceed 10 mg/m³.</p>	
Iron	<p>Chapter 5.2.1 Overall Dust, including fine dust. The emissions of dust in the exhaust gas are not allowed to exceed the following values:Mass flow:0,20 kg/hr or Mass conc.:20 mg/m³ The mass per unit volume of 0,15 g/m³ in exhaust gas is not allowed to be exceeded also on observance or lower deviation of a mass flow of 0,20 kg/h.For emission sources that exceed the mass flow rate of 0.40 kg/h, the mass concentration in waste gas the mass concentration must not exceed 10 mg/m³.</p>	
Nickel	<p>Chapter 5.2.2 Inorganic dusts. Class II. Also with the presence of several substances of the same class, the following values are in all not allowed to be exceeded in the exhaust gas:Mass flow:2,5 g/hr or Mass conc.:0,5 mg/m³. Specified as Ni.</p>	
Manganese	<p>Chapter 5.2.2 Inorganic dusts. Class III. Also with the presence of several substances of the same class, the following values are in all not allowed to be exceeded in the exhaust gas:Mass flow:5 g/hr or Mass conc.:1 mg/m³. Specified as Mn.</p>	
Copper	<p>Chapter 5.2.2 Inorganic dusts. Class III. Also with the presence of several substances of the same class, the following values are in all not allowed to be exceeded in the exhaust gas:Mass flow:5 g/hr or Mass conc.:1 mg/m³. Specified as Cu.</p>	
Aluminium	<p>Chapter 5.2.1 Overall Dust, including fine dust. The emissions of dust in the exhaust gas are not allowed to exceed the following values:Mass flow:0.20 kg/hr or Mass conc.:20 mg/m³ The mass per unit volume of 0.15 g/m³ in exhaust gas is not allowed to be exceeded also on observance or lower deviation of a mass flow of 0.20 kg/h.For emission sources that exceed the mass flow rate of 0.40</p>	

	kg/h, the mass concentration in waste gas the mass concentration must not exceed 10 mg/m ³ .	
Zinc	Chapter 5.2.1 Overall Dust, including fine dust. The emissions of dust in the exhaust gas are not allowed to exceed the following values: Mass flow: 0.20 kg/hr or Mass conc.: 20 mg/m ³ The mass per unit volume of 0.15 g/m ³ in exhaust gas is not allowed to be exceeded also on observance or lower deviation of a mass flow of 0.20 kg/h. For emission sources that exceed the mass flow rate of 0.40 kg/h, the mass concentration in waste gas the mass concentration must not exceed 10 mg/m ³ .	
Lead	Chapter 5.2.2 Inorganic dusts. Class II. Also with the presence of several substances of the same class, the following values are in all not allowed to be exceeded in the exhaust gas: Mass flow: 2,5 g/hr or Mass conc.: 0,5 mg/m ³ . Specified as Pb.	
Potassium	Chapter 5.2.1 Overall Dust, including fine dust. The emissions of dust in the exhaust gas are not allowed to exceed the following values: Mass flow: 0,20 kg/hr or Mass conc.: 20 mg/m ³ The mass per unit volume of 0,15 g/m ³ in exhaust gas is not allowed to be exceeded also on observance or lower deviation of a mass flow of 0,20 kg/h. For emission sources that exceed the mass flow rate of 0.40 kg/h, the mass concentration in waste gas the mass concentration must not exceed 10 mg/m ³ .	
Sodium	Chapter 5.2.1 Overall Dust, including fine dust. The emissions of dust in the exhaust gas are not allowed to exceed the following values: Mass flow: 0,20 kg/hr or Mass conc.: 20 mg/m ³ The mass per unit volume of 0,15 g/m ³ in exhaust gas is not allowed to be exceeded also on observance or lower deviation of a mass flow of 0,20 kg/h. For emission sources that exceed the mass flow rate of 0.40 kg/h, the mass concentration in waste gas the mass concentration must not exceed 10 mg/m ³ .	
Silicon	Chapter 5.2.1 Overall Dust, including fine dust. The emissions of dust in the exhaust gas are not allowed to exceed the following values: Mass flow: 0,20 kg/hr or Mass conc.: 20 mg/m ³ The mass per	

	unit volume of 0,15 g/m ³ in exhaust gas is not allowed to be exceeded also on observance or lower deviation of a mass flow of 0,20 kg/h. For emission sources that exceed the mass flow rate of 0.40 kg/h, the mass concentration in waste gas the mass concentration must not exceed 10 mg/m ³ .	
Boron	Chapter 5.2.1 Overall Dust, including fine dust. The emissions of dust in the exhaust gas are not allowed to exceed the following values: Mass flow: 0,20 kg/hr or Mass conc.: 20 mg/m ³ The mass per unit volume of 0,15 g/m ³ in exhaust gas is not allowed to be exceeded also on observance or lower deviation of a mass flow of 0,20 kg/h. For emission sources that exceed the mass flow rate of 0.40 kg/h, the mass concentration in waste gas the mass concentration must not exceed 10 mg/m ³ .	
Fluorine	Chapter 5.2.4 Gaseous inorganic substances. Class II. Following values are not allowed to be exceeded in the exhaust gas Mass flow: 15 g/hr or Mass conc.: 3 mg/m ³ . Specified as hydrogen fluoride.	
Chlorine	Chapter 5.2.4 Gaseous inorganic substances. Class II. Following values are not allowed to be exceeded in the exhaust gas Mass flow: 15 g/hr or Mass conc.: 3 mg/m ³	
Potassium sulfate	Chapter 5.2.1 Overall Dust, including fine dust. The emissions of dust in the exhaust gas are not allowed to exceed the following values: Mass flow: 0,20 kg/hr or Mass conc.: 20 mg/m ³ The mass per unit volume of 0,15 g/m ³ in exhaust gas is not allowed to be exceeded also on observance or lower deviation of a mass flow of 0,20 kg/h. For emission sources that exceed the mass flow rate of 0.40 kg/h, the mass concentration in waste gas the mass concentration must not exceed 10 mg/m ³ .	

| German technical rules for hazardous substances (TRGS)

Component	TRGS	Remark
Lithium carbonate	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS 500 TRGS 509 TRGS 510	
Calcium	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS	

	720 TRGS 721 TRGS 722 TRGS 723 TRGS 724	
Magnesium	TRGS 500 TRGS 509 TRGS 510 TRGS 800	
Iron	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724	
Nickel	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS 401 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724	
Manganese	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724	
Copper	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724	
Aluminium	TRGS 500 TRGS 509 TRGS 510 TRGS 800	
Zinc	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724	
Lead	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS 401 TRGS 500 TRGS 509 TRGS 510 TRGS 560 TRGS 505	
Potassium	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 401 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724	
Sodium	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 401 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724	
Silicon	TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724	
Boron	TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724	
Fluorine	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS 401 TRGS 407 TRGS 745 TRBS 3145 TRGS 746 TRBS 3146 TRGS 510 TRGS 500 TRGS 800	
Chlorine	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS	

	401 TRGS 407 TRGS 745/TRBS 3145 TRGS 746/TRBS 3146 TRGS 510 TRGS 500 TRGS 800	
Potassium sulfate	TRGS 500 TRGS 509 TRGS 510	

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

16 Other information

Information on revision

Creation Date	2026/01/17
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Reference

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- [6] EPA: Integrated Risk Information System, website: <http://cfpub.epa.gov/iris/>.
- [7] U.S. Department of Transportation: ERG, website: <http://www.phmsa.dot.gov/hazmat/library/erg>.
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Abbreviations and acronyms

CAS	Chemical Abstracts Service	UN	The United Nations
PC-STEL	Short term exposure limit	OECD	Organization for Economic Co-operation and Development
PC-TWA	Time Weighted Average	IMDG-CODE	International Maritime Dangerous Goods CODE
MAC	Maximum Allowable Concentration	IARC	International Agency for Research on Cancer
DNEL	Derived No Effect Level	ICAO	International Civil Aviation Organization
PNEC	Predicted No Effect Concentration	IATA	International Air Transportation Association
NOEC	No Observed Effect Concentration	ACGIH	American Conference of Governmental Industrial Hygienists
LC ₅₀	Lethal Concentration 50%	NFPA	National Fire Protection Association
LD ₅₀	Lethal Dose 50%	NTP	National Toxicology Program
EC ₅₀	Effective Concentration 50%	PBT	Persistent, Bioaccumulative, Toxic
EC _x	Effective Concentration X%	vPvB	very Persistent, very Bioaccumulative
P _{OW}	Partition coefficient Octanol: Water	CMR	Carcinogens, mutagens or substances toxic to reproduction
BCF	Bioconcentration factor	RPE	Respiratory Protective Equipment
ED	Endocrine disruptor		

Disclaimer

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