Safety Data Sheet

29 CFR 1910.1200 App D

Solar Flux® Type B

Version number: 1.0

SECTION 1: Identification

1.1 Product identifier

Trade name **Solar Flux® Type B**

CAS number not relevant (mixture)

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

Relevant identified uses Welding powder

1.3 Details of the supplier of the safety data sheet

Golden Empire Corporation / Solar Flux
Calabasas, CA 91372
United States

Telephone: +1 424 645 8845
e-mail: eaw.solarflux@gmail.com

e-mail (competent person) sdb@csb-online.de

Please do not use this e-mail address to ask for the latest safety data sheet. For this purpose contact Golden Empire Corporation / Solar Flux.

1.4 Emergency telephone number

As above or next toxicological information centre.

SECTION 2: Hazard(s) identification

2.1 Classification of the substance or mixture

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Classification				
Section	**Hazard class**	**Category**	**Hazard class and category**	**Hazard statement**
A.6	carcinogenicity	1A	Carc. 1A	H350
A.7	reproductive toxicity	1B	Repr. 1B	H360FD
A.9	specific target organ toxicity - repeated exposure	1+2	STOT RE 1+2	H372,H373

For full text of abbreviations: see SECTION 16

The most important adverse physicochemical, human health and environmental effects

Delayed or immediate effects can be expected after short or long-term exposure.

2.2 Label elements

Labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Signal word Danger

Pictograms

GHS08

Hazard statements

H350	May cause cancer.
H360FD	May damage fertility. May damage the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P281	Wear personal protective equipment/face protection.
P308+P313	If exposed or concerned: Get medical advice/attention.
P314	Get medical advice/attention if you feel unwell.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental hazard information

For professional users only.

Hazardous ingredients for labelling

manganese dioxide
quartz
boric acid

2.3 Other hazards

Hazards not otherwise classified

Contact with acids liberates very toxic gas.

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

Not relevant (mixture).

3.2 Mixtures

Description of the mixture

Hazardous ingredients

Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms	Specific Conc. Limits
quartz	CAS No 14808-60-7	10 – < 25	Carc. 1A / H350 STOT RE 1 / H372		
manganese dioxide	CAS No 1313-13-9	5 – < 10	Acute Tox. 4 / H302 Acute Tox. 4 / H332 STOT RE 2 / H373		
lithium fluoride	CAS No 7789-24-4	1 – < 5	Acute Tox. 4 / H302 Eye Irrit. 2A / H319		
boric acid	CAS No 10043-35-3	1 – < 5	Repr. 1B / H360FD cD / OSHA003		
manganese	CAS No 7439-96-5	1 – < 5			
Feldspar	CAS No 68476-25-5	0 – < 1	Carc. 1A / H350		

The product contains crystalline silicic acids in the form of cristobalite and quartz which, if inhaled, are harmful to health. However, the evaluation of scientific findings is controversial. Recent diagnostic possibilities have provided the certainty that silicosis (pneumoconiosis) is a consequence of heavy exposure to quartz dust. There is also evidence that silicotic people have an increased lung cancer risk.

SECTION 4: First-aid measures

4.1 Description of first-aid measures

General notes

Self-protection of the first aider.
Remove victim out of the danger area.
Take off immediately all contaminated clothing.
In all cases of doubt, or when symptoms persist, seek medical advice.

Following inhalation

Provide fresh air.
If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions.

Following skin contact

After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water and soap.

Following eye contact

Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.

Following ingestion

Rinse mouth. Do not induce vomiting.
Call a physician in any case.

Notes for the doctor

None.

4.2 Most important symptoms and effects, both acute and delayed

Varying degrees of pulmonary injury.

4.3 Indication of any immediate medical attention and special treatment needed

None.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

use metal fire powder to extinguish

Unsuitable extinguishing media

water

5.2 Special hazards arising from the substance or mixture

Hazardous decomposition products: Section 10.

Hazardous combustion products

metal oxide smoke, toxic

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes.
Coordinate firefighting measures to the fire surroundings.
Do not allow firefighting water to enter drains or water courses.
Collect contaminated firefighting water separately.
Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters

chemical protection suit, self-contained breathing apparatus (EN 133)

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Follow emergency procedures such as the need to evacuate the danger area or to consult an expert.
Remove persons to safety.
Ventilate affected area.
Avoid contact with skin and eyes.
Do not breathe dust.
Control of dust.
Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing.

For emergency responders

Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.
Warning and evacuating people in the neighborhood.

6.2 Environmental precautions

Knock down dust with water spray.
Keep away from drains, surface and ground water.
Retain contaminated washing water and dispose of it.
If substance has entered a water course or sewer, inform the responsible authority.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Take up mechanically.

Advice on how to clean up a spill

Take up mechanically.
Collect spillage.

Other information relating to spills and releases

Place in appropriate containers for disposal.
Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5.
Personal protective equipment: see section 8.
Incompatible materials: see section 10.
Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Obtain special instructions before use.

Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation.

Specific notes/details

Dust deposits may accumulate on all deposition surfaces in a technical room.

Handling of incompatible substances or mixtures

Do not mix with acids.
Do not mix with alkali.
Do not mix with oxidizer

Measures to protect the environment

Avoid release to the environment.

Advice on general occupational hygiene

Do not eat, drink and smoke in work areas.
Wash hands after use.
Preventive skin protection (barrier creams/ointments) is recommended.
Remove contaminated clothing and protective equipment before entering eating areas.
Avoid contact with skin and eyes.
Do not breathe dust.

7.2 Conditions for safe storage, including any incompatibilities

Flammability hazards

None.

Incompatible substances or mixtures

Incompatible materials: see section 10.

Protect against external exposure, such as

heat

Consideration of other advice

Keep away from food, drink and animal feedingstuffs.

Ventilation requirements

Provision of sufficient ventilation.

Specific designs for storage rooms or vessels

Store locked up.
Keep container tightly closed and in a well-ventilated place.

Packaging compatibilities

Keep only in original container.

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)

Country	Name of agent	CAS No	Identifier	TWA [mg/m³]	STEL [mg/m³]	Notation	Source
US	fluorides		PEL (CA)	2.5		F	Cal/OSHA PEL
US	fluorides		PEL	2.5		F	29 CFR 1910.1000
US	inorganic, solid fluorides		REL	2.5 (10 h)		F	NIOSH REL
US	manganese compounds		PEL (CA)	0.2		Mn	Cal/OSHA PEL
US	manganese compounds		REL	1 (10 h)	3	Mn	NIOSH REL
US	manganese compounds		PEL			Mn	29 CFR 1910.1000
US	Particulates not otherwise regulated		PEL (CA)	10		dust	Cal/OSHA PEL
US	Particulates not otherwise regulated		PEL (CA)	5		r	Cal/OSHA PEL
US	particulates not otherwise classified		REL			appx-D	NIOSH REL
US	particulates not otherwise classified (PNOC)		PEL	15		i, dust	29 CFR 1910.1000
US	particulates not otherwise classified (PNOC)		PEL	5		partml, r, dust	29 CFR 1910.1000
US	silica, crystalline		PEL	0.05		r	29 CFR 1910.1000
US	quartz	14808-60-7	PEL (CA)	0.05		r	Cal/OSHA PEL
US	silica, crystalline - quartz	14808-60-7	PEL	0.05		r	29 CFR 1910.1000
US	silica, crystalline - quartz	14808-60-7	REL	0.05 (10 h)		r, appx-A	NIOSH REL
US	manganese	7439-96-5	PEL (CA)	0.2	3	fume, Mn	Cal/OSHA PEL

Occupational exposure limit values (Workplace Exposure Limits)

Country	Name of agent	CAS No	Identifier	TWA [mg/m³]	STEL [mg/m³]	Notation	Source
US	manganese	7439-96-5	REL	1 (10 h)	3	fume, Mn	NIOSH REL
US	manganese	7439-96-5	PEL (CA)	0.2		Mn	Cal/OSHA PEL
US	manganese	7439-96-5	PEL			Mn, fume	29 CFR 1910.1000

Notation

appx-A	NIOSH Potential Occupational Carcinogen (Appendix A)
appx-D	see Appendix D - Substances with No Established RELs
dust	as dust
F	calculated as F (fluorine)
fume	as fume
i	inhalable fraction
Mn	calculated as Mn (manganese)
partml	particles/ml
r	respirable fraction
STEL	short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)
TWA	time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified

Relevant DNELs of components of the mixture

Name of substance	CAS No	End-point	Threshold level	Protection goal, route of exposure	Used in	Exposure time
manganese dioxide	1313-13-9	DNEL	0.2 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
manganese dioxide	1313-13-9	DNEL	0.004 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
boric acid	10043-35-3	DNEL	8.3 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
boric acid	10043-35-3	DNEL	392 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
lithium fluoride	7789-24-4	DNEL	10 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
lithium fluoride	7789-24-4	DNEL	44.8 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects

Relevant PNECs of components of the mixture				
Name of substance	**CAS No**	**Endpoint**	**Threshold level**	**Environmental compartment**
manganese dioxide	1313-13-9	PNEC	0 mg/l	freshwater
manganese dioxide	1313-13-9	PNEC	0 mg/l	marine water
manganese dioxide	1313-13-9	PNEC	100 mg/l	sewage treatment plant (STP)
manganese dioxide	1313-13-9	PNEC	0.037 mg/kg	freshwater sediment
manganese dioxide	1313-13-9	PNEC	0.004 mg/kg	marine sediment
manganese dioxide	1313-13-9	PNEC	0.028 mg/kg	soil
boric acid	10043-35-3	PNEC	2.9 mg/l	freshwater
boric acid	10043-35-3	PNEC	2.9 mg/l	marine water
boric acid	10043-35-3	PNEC	10 mg/l	sewage treatment plant (STP)
boric acid	10043-35-3	PNEC	5.7 mg/kg	soil
lithium fluoride	7789-24-4	PNEC	5.05 mg/l	freshwater
lithium fluoride	7789-24-4	PNEC	0.505 mg/l	marine water
lithium fluoride	7789-24-4	PNEC	85.78 mg/l	sewage treatment plant (STP)
lithium fluoride	7789-24-4	PNEC	25.05 mg/kg	freshwater sediment
lithium fluoride	7789-24-4	PNEC	2.505 mg/kg	marine sediment
lithium fluoride	7789-24-4	PNEC	2.06 mg/kg	soil

8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection.

Hand protection

Protective gloves		
Material	**Material thickness**	**Breakthrough times of the glove material**
no information available	no information available	no information available

Wear suitable gloves.
Chemical protection gloves are suitable, which are tested according to EN 374.
Check leak-tightness/impermeability prior to use.
In the case of wanting to use the gloves again, clean them before taking off and air them well.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.
Particulate filter device (EN 143).

Environmental exposure controls

Use appropriate container to avoid environmental contamination.
Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	Solid (powder)
Color	Dark grey
Odor	Characteristic

Other safety parameters

pH (value)	Not applicable
Melting point/freezing point	Not determined
Initial boiling point and boiling range	1,682 °C
Flash point	Not applicable
Evaporation rate	Not determined
Flammability (solid, gas)	Non-combustible
Explosive limits	
Explosion limits of dust clouds	Not determined
Vapor pressure	Not determined
Density and/or relative density	
Density	2.2 $^{g}/_{cm^3}$ at 20 °C
Solubility(ies)	
Water solubility	42 $^{mg}/_{l}$ Not miscible in any proportion

Partition coefficient	
partition coefficient n-octanol/water (log value)	Not determined
Decomposition temperature	Not relevant
Viscosity	Not relevant (solid)
Explosive properties	None
Oxidizing properties	None
Information with regard to physical hazard classes	Hazard classes acc. to GHS (Physical hazards): Not relevant

9.2 Other information

There is no additional information

SECTION 10: Stability and reactivity

10.1 Reactivity

No information available.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

Contact with acids liberates very toxic gas.

10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

10.5 Incompatible materials

acids, bases, oxidizers, aluminum, halogen

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.
Hydrogen fluoride (HF).
Metallic oxides containing heavy metals.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Classification procedure

If not otherwise specified the classification is based on:
Ingredients of the mixture (additivity formula).

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Acute toxicity

Test data are not available for the complete mixture.

Acute toxicity of components of the mixture						
Name of substance	**CAS No**	**Exposure route**	**Endpoint**	**Value**	**Species**	**Method**
boric acid	10043-35-3	oral	LD50	3,450 mg/kg	rat, male	
boric acid	10043-35-3	oral	LD50	4,080 mg/kg	rat, female	
boric acid	10043-35-3	dermal	LD0	>2,000 mg/kg	rabbit	FIFRA (40 CFR 163)
boric acid	10043-35-3	inhalation: dust/mist	LC0	≥2.12 mg/l/4h	rat	OECD Guideline 403
manganese	7439-96-5	oral	LD50	>2,000 mg/kg	rat	
manganese	7439-96-5	inhalation: dust/mist	LC50	>5.14 mg/l/4h	rat	
lithium fluoride	7789-24-4	oral	LD50	706 mg/kg	rat	OECD Guideline 401
lithium fluoride	7789-24-4	inhalation: dust/mist	LC50	>15.57 mg/l/4h	rat	OECD Guideline 403
lithium fluoride	7789-24-4	dermal	LD50	>2,000 mg/kg	rat	OECD Guideline 402

Skin corrosion/irritation

Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Serious eye damage/eye irritation

Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Respiratory or skin sensitization

Skin sensitization
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Respiratory sensitization
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Germ cell mutagenicity

Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Carcinogenicity

May cause cancer.

IARC Monographs

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans			
Name of substance	**CAS No**	**Classification**	**Number**
Solar Flux® Type B		2A	
quartz	14808-60-7	1	
Feldspar	14808-60-7	1	
quartz	14808-60-7	1	
titanium dioxide	13463-67-7	2B	
wollastonite (calcium metasilicate)	13983-17-0	3	

Legend

1	Carcinogenic to humans
2A	Probably carcinogenic to humans
2B	Possibly carcinogenic to humans
3	Not classifiable as to carcinogenicity in humans

National Toxicology Program (United States)

None of the ingredients are listed.

OSHA Carcinogens

None of the ingredients are listed.

Reproductive toxicity

May damage the unborn child.
May damage fertility.

Specific target organ toxicity - single exposure

Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - repeated exposure

Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

11.2 Information on other hazards

Endocrine disrupting properties

The mixture contains substance(s) with an endocrine disrupting potential.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity (acute)

Test data are not available for the complete mixture.

Aquatic toxicity (acute) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Method	Exposure time
manganese dioxide	1313-13-9	EC50	>0.073 mg/l	daphnia magna	OECD Guideline 202	48 h
boric acid	10043-35-3	LC50	487 mg/l	fish		48 h
boric acid	10043-35-3	LC50	180 mg/l	Crustaceae (Crangon sp.)		48 h
boric acid	10043-35-3	EC50	226 mg/l	Crustaceae (Crangon sp.)		48 h
lithium fluoride	7789-24-4	EC50	132.4 mg/l	aquatic invertebrates		48 h
lithium fluoride	7789-24-4	EC50	112 mg/l	algae (Desmodesmus subspicatus)	OECD Guideline 201	72 h
lithium fluoride	7789-24-4	ErC50	>400 mg/l	algae (Desmodesmus subspicatus)	OECD Guideline 201	72 h

Aquatic toxicity (chronic)

Test data are not available for the complete mixture.

Aquatic toxicity (chronic) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Method	Exposure time
lithium fluoride	7789-24-4	NOEC	14.1 mg/l	daphnia magna		21 d
lithium fluoride	7789-24-4	NOEC	4 mg/l	rainbow trout (Oncorhynchus mykiss)		21 d
lithium fluoride	7789-24-4	NOEC	25 mg/l	algae (Desmodesmus subspicatus)	OECD Guideline 201	72 h
lithium fluoride	7789-24-4	LOEC	50 mg/l	algae (Desmodesmus subspicatus)	OECD Guideline 201	72 h
lithium fluoride	7789-24-4	growth rate (ErCx) 10%	80 mg/l	algae (Desmodesmus subspicatus)	OECD Guideline 201	72 h

12.2 Persistence and degradability

Biodegradation

No data available.

Persistence

No data available.

12.3 Bioaccumulative potential

Test data are not available for the complete mixture.

Bioaccumulative potential of components of the mixture

Name of substance	CAS No	BCF	Log KOW
boric acid	10043-35-3		-1.09 (pH value: 7.5, 22 °C)

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Endocrine disrupting properties

The mixture contains substance(s) with an endocrine disrupting potential.

12.7 Other adverse effects

Data are not available.

Remarks

Wassergefährdungsklasse, WGK (water hazard class): 3

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packages

Completely emptied packages can be recycled.
Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1	**UN number**	Not assigned
14.2	**UN proper shipping name**	-
14.3	**Transport hazard class(es)**	-
14.4	**Packing group**	-
14.5	**Environmental hazards**	-
14.6	**Special precautions for user**	-
14.7	**Transport in bulk according to Annex II of MARPOL and the IBC Code**	-

14.8 Information for each of the UN Model Regulations

Transport of dangerous goods by road or rail (49 CFR US DOT) Additional information

Not subject to transport regulations.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

National regulations (United States)

Toxic Substance Control Act (TSCA) All ingredients are listed or exempt from listing

Superfund Amendment and Reauthorization Act (SARA TITLE III)

The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)

The List of Extremely Hazardous Substances and Their Threshold Planning Quantities

Name of substance	CAS No	Notes	Reportable quantity (pounds)	Threshold planning quantity (pounds)
red phosphorus	7723-14-0	a d	1	100

Legend

a This material is a reactive solid. The TPQ does not default to 10,000 pounds for non-powder, non-molten, non-solution form.

d Revised TPQ based on new or re-evaluated toxicity data, April 22, 1987.

Specific Toxic Chemical Listings (EPCRA Section 313)

Toxics Release Inventory: Specific Toxic Chemical Listings

Name of substance	CAS No	Remarks	Effective date
aluminium powder (pyrophoric)	7429-90-5	fume or dust	1987-01-01
red phosphorus	7723-14-0	Phosphorus (yellow or white)	1987-01-01
aluminium oxide	1344-28-1	fibrous forms	1987-01-01
manganese	7439-96-5		1987-01-01

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4)

Name of substance	CAS No	Remarks	Statutory code	Final RQ pounds (Kg)
red phosphorus	7723-14-0		1 3	1 (0,454)

Legend

1 "1" indicates that the statutory source is section 311(b)(2) of the Clean Water Act

3 "3" indicates that the source is section 112 of the Clean Air Act

Clean Air Act

none of the ingredients are listed

Right to Know Hazardous Substance List

Hazardous Substance List (NJ-RTK)

Name of substance	CAS No	Remarks	Classifications
calcium oxide	1305-78-8		CO R1.
dipotassium oxide	12136-45-7		CO R2.
quartz	14808-60-7		CA.
Feldspar	14808-60-7		CA.
aluminium powder (pyrophoric)	7429-90-5		F3 R1.
calcium carbonate	1317-65-3		
Barium oxide	1304-28-5		R2.
red phosphorus	7723-14-0		F4 R2.
quartz	14808-60-7		CA.

Name of substance	CAS No	Remarks	Classifications
manganese dioxide			
magnesium oxide	1309-48-4		
limestone	1317-65-3		
aluminium oxide	1344-28-1		
titanium dioxide	13463-67-7		
manganese	7439-96-5		F3 R1.
silicon	7440-21-3		F3.
titanium	7440-32-6		F3 R1.
carbon	7782-42-5		

Legend

CA	Carcinogenic
CO	Corrosive
F3	Flammable - Third Degree
F4	Flammable - Fourth Degree
R1	Reactive - First Degree
R2	Reactive - Second Degree

California Environmental Protection Agency (Cal/EPA): Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1987

Proposition 65 List of chemicals

Name acc. to inventory	CAS No	Remarks	Type of the toxicity
titanium dioxide	13463-67-7	airborne, unbound particles of respirable size	cancer

Industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System.
American Coatings Association.

Category	Rating	Description
Chronic	*	chronic (long-term) health effects may result from repeated overexposure
Health	0	no significant risk to health
Flammability	0	material that will not burn under typical fire conditions

Category	Rating	Description
Physical hazard	0	material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive
Personal protection	-	

NFPA® 704

National Fire Protection Association: Standard System for the Identification of the Hazards of Materials for Emergency Response (United States).

Category	Degree of hazard	Description
Flammability	0	material that will not burn under typical fire conditions
Health	0	material that, under emergency conditions, would offer no hazard beyond that of ordinary combustible material
Instability	0	material that is normally stable, even under fire conditions
Special hazard		

15.2 Chemical Safety Assessment

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

SECTION 16: Other information, including date of preparation or last revision

Date of preparation: 2021-02-16

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
29 CFR 1910.1000	29 CFR 1910.1000, Tables Z-1, Z-2, Z-3 - Occupational Safety and Health Standards: Toxic and Hazardous Substances (permissible exposure limits)
49 CFR US DOT	49 CFR U.S. Department of Transportation
Acute Tox.	Acute toxicity
BCF	Bioconcentration factor
Cal/OSHA PEL	California Division of Occupational Safety and Health (Cal/OSHA): Permissible Exposure Limits (PELs)
Carc.	Carcinogenicity
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
cD	Combustible dust
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval

Abbr.	Descriptions of used abbreviations
ErC50	≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control
Eye Dam.	Seriously damaging to the eye
Eye Irrit.	Irritant to the eye
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IARC Mono-graphs	IARC Monographs on the Evaluation of Carcinogenic Risks to Humans
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
IMDG	International Maritime Dangerous Goods Code
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
LOEC	Lowest Observed Effect Concentration
log KOW	n-Octanol/water
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
NIOSH REL	National Institute for Occupational Safety and Health (NIOSH): Recommended Exposure Limits (RELs)
NOEC	No Observed Effect Concentration
NPCA-HMIS® III	National Paint and Coatings Association: Hazardous Materials Identification System - HMIS® III, Third Edition
OSHA	Occupational Safety and Health Administration (United States)
PBT	Persistent, Bioaccumulative and Toxic
PEL	Permissible exposure limit
PNEC	Predicted No-Effect Concentration
Repr.	Reproductive toxicity
RTECS	Registry of Toxic Effects of Chemical Substances (database of NIOSH with toxicological information)
STEL	Short-term exposure limit
STOT RE	Specific target organ toxicity - repeated exposure
TWA	Time-weighted average
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

OSHA Hazard Communication Standard (HCS), 29 CFR 1910.1200.

Transport of dangerous goods by road or rail (49 CFR US DOT).
International Maritime Dangerous Goods Code (IMDG).
Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure

Physical and chemical properties.
Health hazards.
Environmental hazards.
The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

List of relevant phrases (code and full text as stated in chapter 2 and 3)

Code	Text
H302	Harmful if swallowed.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H350	May cause cancer.
H360FD	May damage fertility. May damage the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
OSHA003	May form combustible dust concentrations in air.

Responsible for the safety data sheet

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Disclaimer

This information is based upon the present state of our knowledge.
This SDS has been compiled and is solely intended for this product.