

1 Identification

- **Product identifier**
- **Trade name:** **SHIELDEX® C 303**
- **Application of the substance / the preparation:**
Intermediate product of varied applicability in industry and trade.
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
GRACE
W. R. Grace & Co.-Conn
7500 Grace Drive
Columbia MD 21044
U. S. A.
- **Information department:**
Health and Safety (9 AM to 5 PM-EST) 1-410-531-4000
MSDS.Davison@grace.com
- **Emergency telephone number:**
Chemtrec North America: +1-800-424-9300
Chemtrec International: +1-703-527-3887
Other Emergencies (24hr): +1-410-531-4000

2 Hazard(s) identification

- **Classification of the substance or mixture**
The product is not classified according to the Globally Harmonized System (GHS).
- **Label elements**
- **GHS label elements** None
- **Hazard pictograms** None
- **Signal word** None
- **Hazard statements** None
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 1
Fire = 0
Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



Health = 1
Fire = 0
Reactivity = 0

- **Hazard not otherwise classified**
The product is very adsorbent and may have a drying effect on skin and eyes.
When exceeding the OEL (Occupational Exposure Limit) a mechanical overburdening of the respiratory system is possible.

3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:** Synthetic, amorphous silicon dioxide calcium-ion exchanged.

· CAS No. and description:		
7631-86-9	amorphous silicon dioxide, chemically prepared	70-80%
1344-95-2	silicic acid, calcium salt	20-30%

7631-86-9	amorphous silicon dioxide, chemically prepared	70-80%
1344-95-2	silicic acid, calcium salt	20-30%

(Contd. on page 2)

Printing date 10/21/2016

Version: 3.6

Reviewed on 10/21/2016

Trade name: **SHIELDEX® C 303**

(Contd. of page 1)

- **List of Dangerous Components** None

4 First-aid measures

- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**
Wash with water.
Generally the product does not irritate the skin.
If skin irritation occur, consult a doctor.
- **After eye contact:**
Flush opened eye with large quantities of running water for at least 30 minutes. If symptoms occur, consult a doctor.
- **After swallowing:** Seek medical attention. Do not induce vomiting.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Hazardous combustion products** No further relevant information available.
- **Protective equipment:** Wear personal protective equipment.
- **Additional information**
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Collect contaminated fire fighting water separately. It must not enter the sewage system.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective clothing.
- **Environmental precautions:**
Damp down dust with water spray.
Do not allow to enter into sewers, surface water and/or groundwater.
- **Methods and material for containment and cleaning up:**
Vacuuming or wet sweeping may be used to avoid dust dispersal.
- **Reference to other sections** No dangerous substances are released.

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Prevent formation of dust.
Keep receptacles tightly sealed.
Provide suction extractors if dust is formed.
Use appropriate industrial vacuum cleaners or central vacuum systems for dust removal.
Take precautionary measures against static discharges.
- **Information about protection against explosions and fires:**
When transferring this material into flammable solvents, use proper grounding to avoid static electric sparks.

(Contd. on page 3)

USA

Trade name: **SHIELDEX® C 303**

(Contd. of page 2)

- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Store away from foodstuffs.
- **Further information about storage conditions:**
Keep receptacle tightly sealed.
Store in dry conditions.
This product is hygroscopic.

8 Exposure controls/personal protection

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

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

7631-86-9 amorphous silicon dioxide, chemically prepared

IDLH	Short-term value: 3000 mg/m ³ IDLH: Immediately Dangerous to Life or Health
PEL	Long-term value: 80/%SiO ₂ mg/m ³ OSHA TWA for amorphous silica
REL	Long-term value: 6 mg/m ³ NIOSH TWA
TLV	Long-term value: 10* 5** mg/m ³ ACGIH TWA *Total dust **Respirable fraction

1344-95-2 silicic acid, calcium salt

PEL	Long-term value: 15* 5** mg/m ³ *total dust **respirable fraction
REL	Long-term value: 10* 5** mg/m ³ *total dust **respirable fraction
TLV	Long-term value: 1 (nonfibrous: inh., E) mg/m ³ synthetic nonfibrous: TLV withdrawn, see App. B

- **Additional Occupational Exposure Limit Values for possible hazards during processing:**

Dust inhalable

PEL	Long-term value: 15 mg/m ³ TWA
REL	Long-term value: 15 mg/m ³ TWA

Dust respirable

PEL	Long-term value: 5 mg/m ³ TWA
REL	Long-term value: 5 mg/m ³ TWA

- **Additional information:** Valid lists at time of creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.
- **Protection of hands:**



Protective gloves

(Contd. on page 4)

Trade name: SHIELDEX® C 303

(Contd. of page 3)

Wear gloves for the protection against mechanical hazards.
Use gloves of stable material (e.g. Nitrile)
Check protective gloves prior to each use for their proper condition.
Check the permeability prior to each new use of the glove.

Material of gloves

Butyl rubber, BR
Nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.11 mm

For the permanent contact in work areas without heightened risk of injury (e.g. Laboratory) gloves made of the following material are suitable:

Butyl rubber, BR
Nitrile rubber, NBR

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

Nitrile rubber, NBR

Not suitable are gloves made of the following materials: Strong fabric gloves**Eye protection:**

Safety glasses

Body protection: Protective work clothing**9 Physical and chemical properties****Information on basic physical and chemical properties****General Information****Appearance:**

Form: Powder
Color: White

Odor: Odorless
Odor threshold: Not available.

pH-value at 20 °C (68 °F): 4.0 - 11.0

Change in condition

Melting point/Melting range: > 1700 °C (> 3092 °F)

Boiling point/Boiling range: > 1700 °C (> 3092 °F)

Conditions of flammability

Flash point: Not available.

Flammability (solid, gaseous): Product is not flammable.
Ignition temperature: Not available.
Decomposition temperature: Not available.

Auto igniting: Product is not self-igniting.

Danger of explosion: Product does not present an explosion hazard.

Explosion limits:
Lower: Not determined.
Upper: Not determined.

Vapor pressure at 20 °C (68 °F): - hPa

(Contd. on page 5)

Printing date 10/21/2016

Version: 3.6

Reviewed on 10/21/2016

Trade name: SHIELDEX® C 303

(Contd. of page 4)

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|---|-----------------------------|
| · Density: | Not determined. |
| · Bulk density at 20 °C (68 °F): | 200 - 600 kg/m ³ |
| · Vapor density | Not applicable. |

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|---------------------------|-----------------|
| · Evaporation rate | Not applicable. |
|---------------------------|-----------------|

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|--|-------------------|
| · Solubility in / Miscibility with Water: | Slightly soluble. |
| · Coefficient of water/oil distribution: | Not available. |

- | | |
|----------------------------------|--------|
| · Viscosity: | |
| Dynamic at 20 °C (68 °F): | - mPas |

- | | |
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| · Other information | No further relevant information available. |
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10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on the likely routes of exposure**
- **Delayed and immediate effects and chronic effects from short or long term exposure**
- **Information on toxicological effects**

- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

7631-86-9 amorphous silicon dioxide, chemically prepared

Oral	LD50	>5000 mg/kg (rat) (OECD 401)
Dermal	LD50	>6000 mg/kg (rabbit) (no guidance available)
Inhalative	LC0	>140->2000 mg/m ³ /4h (rat) (OCED 403)
Maximum attainable concentration, mortality does not appear.		

1344-95-2 silicic acid, calcium salt

Oral	LD50	>5000 mg/kg (rat) (OECD Guideline 401) Read-across from supporting substance ECHA 2011
Dermal	LD50 (24 h)	>5000 mg/kg (rabbit) (OECD Guideline 402) Read-across from supporting substance. ECHA 2014
Inhalative	LC50 (4 h)	>58.8 mg/m ³ (rat) (OECD Guideline 403) ECHA 2014

- **Primary irritant effect:**

- **on the skin:**

7631-86-9 amorphous silicon dioxide, chemically prepared

Irritation of skin	IS	0 (rabbit) (OECD 404)
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(Contd. on page 6)

USA

Printing date 10/21/2016

Version: 3.6

Reviewed on 10/21/2016

Trade name: **SHIELDEX® C 303**

(Contd. of page 5)

1344-95-2 silicic acid, calcium salt

Irritation of skin	IS	0.1 (rabbit) (other, scoring according to Draize system) Read-across from supporting substance. not irritating ECHA 2014
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· **on the eye:****7631-86-9 amorphous silicon dioxide, chemically prepared**

Irritation of eyes	IS	0 (rabbit) (OECD 405)
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1344-95-2 silicic acid, calcium salt

Irritation of eyes	IS	1 (rabbit) (other, scoring according to Draize system) Read-across from supporting substance. not irritating ECHA 2014
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· **Respiratory sensitization** No further relevant information available.· **Skin sensitization** No further relevant information available.· **Additional toxicological information:**· **Carcinogenic categories**· **IARC (International Agency for Research on Cancer)**

7631-86-9	amorphous silicon dioxide, chemically prepared	3
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· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

· **Repeated dose toxicity****7631-86-9 amorphous silicon dioxide, chemically prepared**

Oral	NOAEL (90 d)	9000 mg/kg bw/day (rat) (OECD 408)
Inhalative	NOAEC (90 d)	1 mg/m ³ (rat) (OECD 413)

1344-95-2 silicic acid, calcium salt

Oral	NOAEL (29 d)	≥1600 mg/kg bw (rat) IUCLID Dataset (12/Sep/2002)
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· **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**· **Carcinogenicity** No further relevant information available.· **Mutagenicity****7631-86-9 amorphous silicon dioxide, chemically prepared**

AMES Test	>5 mg/plate (in-vitro) (OECD 471) negative, with and without metabolic activation ECHA 2012
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1344-95-2 silicic acid, calcium salt

AMES Test	10 mg/plate (Salmonella typhimurium) (OECD Guideline 471) Read-across from supporting substance negative, with and without metabolic activation ECHA 2014
Chromosome Abberation	0.01 % (Wi-38 (human embryonic lung cells)) (OECD Guideline 473) without metabolic activation negative ECHA 2014

· **Reproductive toxicity****7631-86-9 amorphous silicon dioxide, chemically prepared**

Oral	NOAEL (maternal toxicity)	1350 mg/kg bw/day (rat) (OECD 414)
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(Contd. on page 7)

USA

Trade name: **SHIELDEX® C 303**

(Contd. of page 6)

NOAEL (teratogenicity)	1350 mg/kg bw/day (rat) (OECD 414)
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- **Specific target organ toxicity (single exposure)** No further relevant information available.
- **Specific target organ toxicity (repeated exposure)** No further relevant information available.
- **Aspiration hazard** No further relevant information available.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:**

· Fish toxicity	
7631-86-9 amorphous silicon dioxide, chemically prepared	
LC0 (96 h) (static)	10000 mg/l (zebra fish) (OECD 203)
1344-95-2 silicic acid, calcium salt	
LC50 (96 h)	>1000 mg/l (Oncorhynchus mykiss) (OECD Guideline 203) ECHA 2014 > 1000 mg/l (Salmo gairdneri) (OECD 203) ECHA 2011
· Water flea toxicity	
7631-86-9 amorphous silicon dioxide, chemically prepared	
EC50 (24 h)	> 1000 mg/l (Daphnia magna) (OECD 202)
1344-95-2 silicic acid, calcium salt	
EC50 (48 h)	>10000 mg/l (Daphnia magna) (OECD Guideline 202) ECHA 2014
· Algae toxicity	
7631-86-9 amorphous silicon dioxide, chemically prepared	
EC50 (72 h)	> 10000 mg/l (Scenedesmus subspicatus) (OECD 201) comparable substance

- **Persistence and degradability** No further relevant information available.
- **Other information:**
Amorphous silica dioxide is chemically and biologically inert.
By the insolubility in water there is a separation at every filtration and sedimentation process.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** Does not accumulate in organisms
- **Mobility in soil** No further relevant information available.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Recommendation:**

(Contd. on page 8)

USA

Printing date 10/21/2016

Version: 3.6

Reviewed on 10/21/2016

Trade name: **SHIELDEX® C 303**

(Contd. of page 7)

Disposal must be made according to official regulations.

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State/provincial and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state/provincial and local requirements.

14 Transport information

· UN-Number	
· DOT, ADR, ADN, IMDG, IATA	None
· UN proper shipping name	
· DOT, ADR, ADN, IMDG, IATA	None
· Transport hazard class(es)	
· DOT, ADR, ADN, IMDG, IATA	
· Class	None
· Packing group	
· DOT, ADR, IMDG, IATA	None
· Environmental hazards:	Not applicable.
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	Not dangerous according to the above specifications. GRACE recommendation for air transport: Cargo aircraft only.

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- SARA

· SARA 302/304

None of the ingredients is listed.

· SARA 313

None of the ingredients is listed.

· TSCA (Toxic Substances Control Act):

7631-86-9 amorphous silicon dioxide, chemically prepared

1344-95-2 silicic acid, calcium salt

· Proposition 65

· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

(Contd. on page 9)

Trade name: **SHIELDEX® C 303**

(Contd. of page 8)

Chemicals known to cause developmental toxicity:
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None of the ingredients is listed.

Carcinogenic categories

EPA (Environmental Protection Agency)

None of the ingredients is listed.

TLV (Threshold Limit Value established by ACGIH)
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1344-95-2	silicic acid, calcium salt
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NIOSH-Ca (National Institute for Occupational Safety and Health)
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None of the ingredients is listed.

Canadian DSL
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7631-86-9	amorphous silicon dioxide, chemically prepared
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1344-95-2	silicic acid, calcium salt
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Canadian NDSL

All substances are listed or exempt from listing.

European EINECS

All ingredients are listed or exempted from listing.
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Philippines Inventory of Chemicals and Chemical Substances PICCS
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All ingredients are listed or exempted from listing.
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Inventory of the Existing Chemical Substances manufactured or imported in China IECSC

All ingredients are listed.

Australian Inventory of Chemical Substances AICS
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All ingredients are listed or exempted from listing.
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Existing and New Chemical Substance List ENCS

7631-86-9	amorphous silicon dioxide, chemically prepared	1-548
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1344-95-2	silicic acid, calcium salt	1-194
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Korean Existing Chemical Inventory KECI

7631-86-9	amorphous silicon dioxide, chemically prepared	KE-31032
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1344-95-2	silicic acid, calcium salt	KE-30982
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TCSCA (Taiwan)
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7631-86-9	amorphous silicon dioxide, chemically prepared	EPEP4A01648271
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1344-95-2	silicic acid, calcium salt	EPEP4A01714105
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GHS label elements None

Hazard pictograms None
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Signal word None
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Hazard statements None
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16 Other information

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

- Department issuing SDS: GRACE Safety & Health Department

- Tarif number 3824 9096 99 0

- Date of preparation / last revision 10/21/2016 / 3.5

- The first date of preparation 06/04/2002

- Number of revision times and the latest revision date 3.6 / 10/21/2016

- Abbreviations and acronyms:

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

(Contd. on page 10)

Trade name: SHIELDEX® C 303

(Contd. of page 9)

ICAO: International Civil Aviation Organisation
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit

*** Data compared to the previous version altered.**

—USA—