

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA
GHS

Printing date: 11 February 2019

Revision: 11 February 2019

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

· 1.1 Product identifier

- Trade name: **Calcia-Zirconia**
- Product code: 9304, 9305, 9307, 7009, 7019, #235, #252

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

- Application of the substance / the mixture: Thermal Spray Powder (TSP)
- Uses advised against: No further relevant information available.

· 1.3 Details of the supplier of the Safety Data Sheet

- Manufacturer/Supplier:
Saint Gobain Coating Solutions
One New Bond Street
Worcester, MA 01615-0137
(508) 795-5000
CeramicMaterials@saint-gobain.com

· 1.4 Emergency telephone number:

- ChemTel Inc.
(800)255-3924 (North America)
+1 (813)248-0585 (International)
1-300-954-583 (Australia)
0-800-591-6042 (Brazil)
400-120-0751 (China)
000-800-100-4086 (India)
01-800-099-0731 (Mexico)

SECTION 2: Hazards identification

· 2.1 Classification of the substance or mixture

· Classification according to Regulation (EC) No 1272/2008

Classifications listed are applicable to the OSHA GHS Hazard Communication Standard (29CFR1910.1200).

Eye Dam. 1 H318 Causes serious eye damage.

· 2.2 Label elements

· Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the Globally Harmonized System within the United States.

The product is classified and labelled according to the CLP regulation.

· Hazard pictograms



GHS05

· Signal word Danger

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- **Hazard-determining components of labelling:**
Calcium oxide
 - **Hazard statements**
H318 Causes serious eye damage.
 - **Precautionary statements**
P280 Wear eye protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.
-
- **2.3 Other hazards** There are no other hazards not otherwise classified that have been identified.
 - **Results of PBT and vPvB assessment**
 - **PBT:** Not applicable.
 - **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

· 3.2 Mixtures

· Components:

CAS: 1314-23-4 EINECS: 215-227-2 Reg.nr.: 01-2119486976-14-XXXX	Zirconium oxide substance with a Community workplace exposure limit	92-96%
CAS: 1305-78-8 EINECS: 215-138-9 Reg.nr.: 01-2119862019-36-XXXX	Calcium oxide -----  Eye Dam. 1, H318  Skin Irrit. 2, H315; STOT SE 3, H335	3-6%
CAS: 12055-23-1 EINECS: 235-013-2 Reg.nr.: 01-2119967820-31-XXXX	Hafnium dioxide substance with a Community workplace exposure limit	1-3%

· Additional information:

For the listed ingredient(s), the identity and/or exact percentages are being withheld as a trade secret.
For the wording of the listed Hazard Statements refer to section 16.

SECTION 4: First aid measures

· 4.1 Description of first aid measures

· After inhalation:

Supply fresh air; consult doctor in case of complaints.
Provide oxygen treatment if affected person has difficulty breathing.

· After skin contact:

Brush off loose particles from skin.
Wash with soap and water.
If skin irritation is experienced, consult a doctor.

· After eye contact:

Protect unharmed eye.
Remove contact lenses if worn.
Rinse opened eye for several minutes under running water. Then consult a doctor.

· After swallowing:

Do not induce vomiting; call for medical help immediately.

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- **4.2 Most important symptoms and effects, both acute and delayed**
May cause gastro-intestinal irritation if ingested.
Nausea in case of ingestion.
Causes serious eye irritation.
- **Hazards:** Causes serious eye damage.
- **4.3 Indication of any immediate medical attention and special treatment needed**
Treat symptomatically.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
The product is not flammable.
Use fire extinguishing methods suitable to surrounding conditions.
- **For safety reasons unsuitable extinguishing agents:** None.
- **5.2 Special hazards arising from the substance or mixture**
No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Avoid formation of dust.
Use personal protective equipment as required.
For large spills, use respiratory protective device against the effects of fumes/dust/aerosol.
- **6.2 Environmental precautions** No special measures required.
- **6.3 Methods and material for containment and cleaning up**
Sweep up and place into an appropriate container.
Dispose of the material collected according to regulations.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Prevent formation of dust.
Avoid breathing dust.
Any unavoidable deposit of dust must be regularly removed.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Requirements to be met by storerooms and receptacles:**

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Store in cool, dry conditions in well sealed receptacles.

- **Information about storage in one common storage facility:** No further relevant information available.
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

· 8.1 Control parameters

· Ingredients with limit values that require monitoring at the workplace:

1314-23-4 Zirconium oxide

EL (Canada)	Short-term value: 10 mg/m ³ Long-term value: 5 mg/m ³ as Zr
WEL (Great Britain)	Short-term value: 10 mg/m ³ Long-term value: 5 mg/m ³ as Zr
OEL (Ireland)	Short-term value: 10 mg/m ³ Long-term value: 5 mg/m ³ as Zr
PEL (USA)	Long-term value: 5 mg/m ³ as Zr
REL (USA)	Short-term value: 10 mg/m ³ Long-term value: 5 mg/m ³ as Zr
TLV (USA)	Short-term value: 10 mg/m ³ Long-term value: 5 mg/m ³ as Zr

1305-78-8 Calcium oxide

IOELV (EU)	Short-term value: 4 mg/m ³ Long-term value: 1 mg/m ³ Respirable fraction
EL (Canada)	Long-term value: 2 mg/m ³
EV (Canada)	Long-term value: 2 mg/m ³
WEL (Great Britain)	Short-term value: 4* mg/m ³ Long-term value: 2 1* mg/m ³ *respirable fraction
OEL (Ireland)	Short-term value: 4 mg/m ³ Long-term value: 1 mg/m ³ IOELV, respirable fraction
PEL (USA)	Long-term value: 5 mg/m ³
REL (USA)	Long-term value: 2 mg/m ³
TLV (USA)	Long-term value: 2 mg/m ³

12055-23-1 Hafnium dioxide

EL (Canada)	Long-term value: 0,5 mg/m ³ as Hf
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PEL (USA)	Long-term value: 0,5 mg/m ³ as Hf
REL (USA)	Long-term value: 0,5 mg/m ³ as Hf
TLV (USA)	Long-term value: 0,5 mg/m ³ as Hf

- **DNELs:** No further relevant information available.
- **PNECs:** No further relevant information available.

· 8.2 Exposure controls

· **General protective and hygienic measures:**

The usual precautionary measures are to be adhered to when handling chemicals.

Keep away from foodstuffs, beverages and feed.

Avoid breathing dust.

Avoid contact with the eyes.

Avoid close or long term contact with the skin.

· **Respiratory protection:**

Not required under normal conditions of use.

An EU approved dust respirator should be used for operations generating dust.

· **Protection of hands:**

Gloves are advised for repeated or prolonged contact.

Protection may be required for spills.

· **Eye protection:**



Safety glasses

- **Body protection:** Protective work clothing
- **Limitation and supervision of exposure into the environment:** No special requirements.
- **Risk management measures:** No special requirements.

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· **Appearance**

Form: Powder

Colour: White

Yellow

· **Odour:** Odourless

· **Odour threshold:** Not determined.

· **pH-value:** Not applicable.

· **Melting point/freezing point:** Not determined.

· **Initial boiling point and boiling range:** Not determined.

· **Flash point:** Not applicable.

· **Flammability (solid, gas):** Not determined.

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· Auto/Self-ignition temperature:	Not determined.
· Decomposition temperature:	Not determined.
· Explosive properties:	Product does not present an explosion hazard.
· Explosion limits	
Lower:	Not determined.
Upper:	Not determined.
· Oxidising properties	Non-oxidising.
· Vapour pressure:	Not determined.
· Density:	
Relative density:	Not determined.
Vapour density:	Not applicable.
Evaporation rate:	Not applicable.
· Solubility in / Miscibility with water:	Not determined.
· Partition coefficient: n-octanol/water:	Not determined.
· Viscosity	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
· 9.2 Other information	No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability** Stable under normal temperatures and pressures.
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** Prevent formation of dust.
- **10.5 Incompatible materials** No further relevant information available.
- **10.6 Hazardous decomposition products** No dangerous decomposition products known.

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:** Based on available data, the classification criteria are not met.
- **LD/LC50 values relevant for classification:** None.
- **Primary irritant effect**
- **Skin corrosion/irritation:** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation:**
Causes serious eye damage.

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- **Respiratory or skin sensitisation:** Based on available data, the classification criteria are not met.

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer):**

None of the ingredients are listed.

- **Probable routes of exposure:**

Ingestion.

Eye contact.

Skin contact.

- **Repeated dose toxicity:** Long term inhalation of product dust may be harmful.

- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.

- **Carcinogenicity:** 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.

SECTION 12: Ecological information

- **12.1 Toxicity**

- **Aquatic toxicity:** No further relevant information available.

- **12.2 Persistence and degradability** No further relevant information available.

- **12.3 Bioaccumulative potential** No further relevant information available.

- **12.4 Mobility in soil** No further relevant information available.

- **Additional ecological information:**

- **General notes:** Avoid release to the environment.

- **12.5 Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**

- **Recommendation**

Smaller quantities can be disposed of with household waste.

Contact waste processors for recycling information.

The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.

- **Uncleaned packaging:**

- **Recommendation:** Disposal must be made according to official regulations.

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SECTION 14: Transport information

- | | |
|--|-----------------|
| · 14.1 UN-Number | |
| · DOT, ADR/RID/ADN, IMDG, IATA | Not Regulated |
| · 14.2 UN proper shipping name | |
| · DOT, ADR/RID/ADN, IMDG, IATA | Not Regulated |
| · 14.3 Transport hazard class(es) | |
| · DOT, ADR/RID/ADN, IMDG, IATA | |
| · Class | Not Regulated |
| · 14.4 Packing group | |
| · DOT, ADR/RID/ADN, IMDG, IATA | Not Regulated |
| · 14.5 Environmental hazards: | |
| · Marine pollutant: | No |
| · 14.6 Special precautions for user | Not applicable. |
| · 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code | Not applicable. |

SECTION 15: Regulatory information

- | |
|--|
| · 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture |
| · United States (USA) |
| · SARA |
| · Section 302 (extremely hazardous substances): |
| None of the ingredients are listed. |
| · Section 355 (extremely hazardous substances): |
| None of the ingredients are listed. |
| · Section 313 (Specific toxic chemical listings): |
| None of the ingredients are listed. |
| · TSCA (Toxic Substances Control Act): |
| All ingredients are listed. |
| · Proposition 65 (California): |
| · Chemicals known to cause cancer: |
| None of the ingredients are listed. |
| · Chemicals known to cause developmental toxicity for females: |
| None of the ingredients are listed. |
| · Chemicals known to cause developmental toxicity for males: |
| None of the ingredients are listed. |

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- **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

- **EPA (Environmental Protection Agency)**

None of the ingredients are listed.

- **IARC (International Agency for Research on Cancer)**

None of the ingredients are listed.

- **Canadian Domestic Substances List (DSL) (Substances not listed)**

All ingredients are listed.

- **Directive 2012/18/EU**

- **Named dangerous substances - ANNEX I** None of the ingredients are listed.

- **Other regulations, limitations and prohibitive regulations**

- **Substances of very high concern (SVHC) according to REACH, Article 57**

None of the ingredients are listed.

- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

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

- **Relevant phrases**

H315 Causes skin irritation.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

- **Abbreviations and acronyms:**

ADR: 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

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

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)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bio-accumulable, Toxic

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

- **Sources**

Website, European Chemicals Agency (echa.europa.eu)Website, US EPA Substance Registry Services (ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do)Website, Chemical Abstracts Registry, American Chemical Society (www.cas.org)

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Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: 978-0-470-07488-6

Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaasen, Curtis D., ed., ISBN:
978-0-07-176923-5.

Safety Data Sheets, Individual Manufacturers

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