

SAFETY DATA SHEET

1. Identification

Product identifier: SILICA GEL, Indicating

Other means of identification

Product No.: 4471, 3402, 3401

Recommended use and restriction on use

Recommended use: Not available.

Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company Name: Avantor Performance Materials, Inc.
Address: 3477 Corporate Parkway, Suite 200
Center Valley, PA 18034

Telephone: Customer Service: 855-282-6867

Fax:
Contact Person: Environmental Health & Safety
e-mail: info@avantormaterials.com

Emergency telephone number:

24 Hour Emergency: 908-859-2151

Chemtrec: 800-424-9300

2. Hazard(s) identification

Hazard classification

Health hazards

Acute toxicity (Oral)	Category 3
Respiratory sensitizer	Category 1
Skin sensitizer	Category 1
Germ cell mutagenicity	Category 2
Carcinogenicity	Category 1B
Toxic to reproduction	Category 1B

Environmental hazards

Acute hazards to the aquatic environment	Category 3
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Label elements

Hazard symbol:



Signal word: Danger

Hazard statement: Toxic if swallowed.
Suspected of causing genetic defects.
May cause cancer.
May damage fertility or the unborn child.
May cause an allergic skin reaction.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Very toxic to aquatic life with long lasting effects.
Harmful to aquatic life.

Precautionary statement

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing dust/fume/gas/mist/vapors/spray. Contaminated work clothing should not be allowed out of the workplace. [In case of inadequate ventilation] wear respiratory protection. Avoid release to the environment.

Response: IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Storage: Store locked up.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification: None.

3. Composition/information on ingredients

Mixtures

Chemical identity	Common name and synonyms	CAS number	Content in percent (%)*
SILICA GEL		63231-67-4	>99%
COBALT(II) CHLORIDE		7646-79-9	<1%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

General information: Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

Ingestion: Rinse mouth thoroughly. Drink a few glasses of water or milk. Call a POISON CENTER or doctor/physician if you feel unwell.

Inhalation: Move to fresh air. Get medical attention if symptoms persist.

Skin contact: Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing. Wash contaminated clothing before reuse.

Eye contact: Flush thoroughly with water. If irritation occurs, get medical assistance.

Most important symptoms/effects, acute and delayed

Symptoms: Toxic if swallowed. May cause allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically. Symptoms may be delayed.

5. Fire-fighting measures

General fire hazards: In case of fire and/or explosion do not breathe fumes.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: None known.

Specific hazards arising from the chemical: During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.

Special protective equipment for fire-fighters: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Keep unauthorized personnel away. Use personal protective equipment. Ventilate closed spaces before entering them. See Section 8 of the MSDS for Personal Protective Equipment.

Methods and material for containment and cleaning up: Sweep up and place in a clearly labeled container for chemical waste. Clean surface thoroughly to remove residual contamination.

Notification Procedures: Prevent entry into waterways, sewer, basements or confined areas. Stop leak if you can do so without risk. Inform authorities if large amounts are involved.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling: Use personal protective equipment as required. Avoid contact with eyes, skin, and clothing. Avoid inhalation of dust. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities: Keep container tightly closed. Store in a cool and well-ventilated place. Store in a dry place. Store away from incompatible materials.

8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Chemical identity	Type	Exposure Limit values	Source
SILICA GEL	REL	6 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
SILICA GEL - Particulate.	ST ESL	27 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	AN ESL	2 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	AN ESL	2 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	ST ESL	27 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
SILICA GEL	TWA	20 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (2000)
	TWA	0.8 mg/m ³	US. OSHA Table Z-3 (29 CFR 1910.1000) (2000)
COBALT(II) CHLORIDE - as Co	TWA	0.02 mg/m ³	US. ACGIH Threshold Limit Values (2011)
COBALT(II) CHLORIDE - Particulate.	ST ESL	0.2 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	AN ESL	0.02 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)

Biological limit values

Chemical identity	Exposure Limit values	Source
COBALT(II) CHLORIDE (Cobalt: Sampling time: End of shift at end of work week.)	1 µg/l (Blood)	ACGIH BEL (03 2013)
	15 µg/l (Urine)	ACGIH BEL (03 2013)

Appropriate engineering controls

No data available.

Individual protection measures, such as personal protective equipment

General information:

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area.

Eyeface protection:

Wear safety glasses with side shields (or goggles) and a face shield.

Skin protection

Hand protection:

Wear protective gloves.

Other:

Wear suitable protective clothing.

Respiratory protection:

In case of inadequate ventilation use suitable respirator.

Hygiene measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Provide eyewash station and safety shower.

9. Physical and chemical properties

Appearance

Physical state:	Solid
Form:	Crystals or powder.
Color:	Blue
Odor:	Odorless
Odor threshold:	No data available.
pH:	No data available.
Melting point/freezing point:	No data available.
Initial boiling point and boiling range:	No data available.
Flash Point:	No data available.
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	No data available.
Vapor density:	No data available.
Relative density:	2.1 (20 °C)
Solubility(ies)	
Solubility in water:	Insoluble in water
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.

10. Stability and reactivity

Reactivity:	No dangerous reaction known under conditions of normal use.
Chemical stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	Hazardous polymerization does not occur.
Conditions to avoid:	Contact with incompatible materials. Moisture. Excessive heat.
Incompatible materials:	Strong oxidizing agents. Strong acids. Strong bases.
Hazardous decomposition products:	Thermal decomposition may produce oxides of carbon and silicon.

11. Toxicological information

Information on likely routes of exposure

Ingestion: Toxic if swallowed. May cause irritation of the gastrointestinal tract.

Inhalation:	May cause irritation to the respiratory system. May cause allergic respiratory reaction.
Skin contact:	May cause irritation. May cause an allergic skin reaction.
Eye contact:	May irritate eyes.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral
Product: ATEmix (Rat): 55 mg/kg

Dermal
Product: No data available.

Inhalation
Product: No data available.

Repeated dose toxicity
Product: No data available.

Skin corrosion/irritation
Product: May cause skin irritation.

Serious eye damage/eye irritation
Product: May irritate eyes.

Respiratory or skin sensitization
Product: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.

Carcinogenicity
Product: May cause cancer.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

COBALT(II) CHLORIDE	Overall evaluation: 2B. Possibly carcinogenic to humans. Overall evaluation: 2B. Possibly carcinogenic to humans.
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US. National Toxicology Program (NTP) Report on Carcinogens:
No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):
No carcinogenic components identified

Germ cell mutagenicity

In vitro
Product: No mutagenic components identified

In vivo
Product: No mutagenic components identified

Reproductive toxicity
Product: No data available. May damage fertility or the unborn child.

Specific target organ toxicity - single exposure
Product: No data available.

Specific target organ toxicity - repeated exposure

Product: No data available.

Aspiration hazard

Product: Not classified

Other effects: None known.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Specified substance(s):

COBALT(II) CHLORIDE LC 50 (Fathead minnow (*Pimephales promelas*), 96 h): 22 mg/l Mortality
 LC 50 (Carp (*Cyprinus carpio*), 96 h): 326 - 340.1 mg/l Mortality
 LC 50 (Guppy (*Poecilia reticulata*), 24 h): 1,875 mg/l Mortality
 LC 50 (Mummichog (*Fundulus heteroclitus*), 72 h): 275 mg/l Mortality
 LC 50 (Rainbow trout, donaldson trout (*Oncorhynchus mykiss*), 96 h): 0.569 - 3.474 mg/l Mortality

Aquatic invertebrates

Product: No data available.

Specified substance(s):

COBALT(II) CHLORIDE EC 50 (Water flea (*Daphnia magna*), 48 h): 1.11 mg/l Intoxication
 EC 50 (Tubificid worm (*Tubifex tubifex*), 96 h): 113.14 - 148.79 mg/l Intoxication
 LC 50 (Water flea (*Ceriodaphnia dubia*), 24 h): 2.3472 mg/l Mortality
 LC 50 (Crayfish (*Austropotamobius pallipes pall*), 30 d): 0.79 mg/l Mortality
 LC 50 (Blue lobster (*Homarus vulgaris*), 96 h): 4.54 - 9.08 mg/l Mortality

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Persistence and degradability

Biodegradation

Product: There are no data on the degradability of this product.

BOD/COD ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration factor (BCF)

Product: No data available on bioaccumulation.

Partition coefficient n-octanol / water (log Kow)

Product: No data available.

Mobility in soil: No data available.
Other adverse effects: Harmful to aquatic organisms.

13. Disposal considerations

Disposal instructions: Discharge, treatment, or disposal may be subject to national, state, or local laws.
Contaminated packaging: Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT
Not regulated.
IMDG
Not regulated.
IATA
Not regulated.

15. Regulatory information

US federal regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

Superfund amendments and reauthorization act of 1986 (SARA)

Hazard categories

Acute (Immediate) Chronic (Delayed) Fire Reactive Pressure Generating

SARA 302 Extremely hazardous substance
None present or none present in regulated quantities.

SARA 304 Emergency release notification
Chemical identity **RQ**

SARA 311/312 Hazardous chemical	Chemical identity	Threshold Planning Quantity
	SILICA GEL	500 lbs
	COBALT(II) CHLORIDE	500 lbs

SARA 313 (TRI reporting)

Chemical identity	Reporting threshold for other users	Reporting threshold for manufacturing and processing
COBALT(II) CHLORIDE	10000 lbs10000 lbs10000 lbs	25000 lbs. 25000 lbs. 25000 lbs.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)
None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

US state regulations

US. California Proposition 65

No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act

No ingredient regulated by NJ Right-to-Know Law present.

US. Massachusetts RTK - Substance List

SILICA GEL Listed

US. Pennsylvania RTK - Hazardous Substances

SILICA GEL Listed

US. Rhode Island RTK

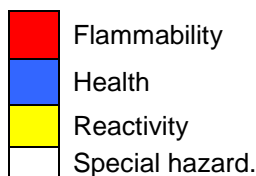
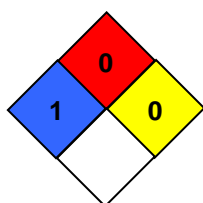
No ingredient regulated by RI Right-to-Know Law present.

Inventory Status:

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	On or in compliance with the inventory
Japan (ENCS) List:	Not in compliance with the inventory.
China Inv. Existing Chemical Substances:	Not in compliance with the inventory.
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Japan ISHL Listing:	Not in compliance with the inventory.
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.

16. Other information, including date of preparation or last revision

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

Issue date:	09-24-2014
Revision date:	No data available.
Version #:	1.0
Further information:	No data available.

Disclaimer:

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