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SAFETY DATA SHEET

Classified in accordance 29 CFR 1910.1200

1. Identification

Product identifier

Product No.:	Product name:	Common name(s), synonym(s)
365967	TUBE MICRO W/MICROGARD SST GLD	BD Microtainer® SST™
36596799	TUBE MICRO W/MICROGARD SST GLD	BD Microtainer® SST™
365978	TUBE MICRO W/MICROGARD SST GLD/AMB	BD Microtainer® SST™ Amber

Recommended restrictions

Recommended use: Scientific and industrial laboratory use. For In Vitro Diagnostic Use.
Restrictions on use: For External Use Only

Manufacturer/Importer/Distributor Information

Manufacturer

Company Name:	BD, Integrated Diagnostic Solutions
Address:	1 Becton Drive Franklin Lakes, NJ 07417 USA
Telephone:	1 800 631 0174
Fax:	1 201 847 4866
Contact Person:	Technical Services
E-mail:	productcomplaints@bd.com

Emergency telephone number: CHEMTREC 1 800 424 9300

2. Hazard(s) identification

Hazard Classification

Not classified

Label Elements

Hazard Symbol: No symbol

Signal Word: No signal word.

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Hazard Statement: Not applicable
Precautionary Statements Not applicable

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 (%)*
Silane, dichlorodimethyl-, reaction products with silica	No data available.	68611-44-9	4.1977%
Quartz (SiO2)	No data available.	14808-60-7	0.0446%
Titanium oxide (TiO2)	No data available.	13463-67-7	0.017%
Aluminum oxide (Al2O3)	No data available.	1344-28-1	5PPM
Iron oxide (Fe2O3)	No data available.	1309-37-1	0.5PPM
Benzene, methyl-	No data available.	108-88-3	0.1PPM

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

4. First-aid measures

Description of necessary first-aid measures

General information: Get medical attention if symptoms occur.

Inhalation: Move into fresh air and keep at rest. Treat symptomatically. Get medical attention if symptoms occur.

Skin Contact: Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse.

Eye contact: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses.

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Ingestion:	Rinse mouth thoroughly. Never give liquid to an unconscious person. Get medical attention if symptoms occur.
Personal Protection for First-aid Responders:	No data available.

Most important symptoms and effects, both acute and delayed

Symptoms:	No data available.
Hazards:	No data available.

Indication of immediate medical attention and special treatment needed

Treatment:	Get medical attention if symptoms occur.

5. Fire-fighting measures

General Fire Hazards:	Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media:	Water spray, fog, CO2, dry chemical, or alcohol resistant foam.
Unsuitable extinguishing media:	None known.
Special hazards arising from the substance or mixture:	None known.

Special protective equipment and precautions for firefighters

Special fire fighting procedures:	No unusual fire or explosion hazards noted.
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:	See Section 8 of the SDS for Personal Protective Equipment.
Accidental release measures:	No data available.
Methods and material for containment and cleaning up:	Sweep or scoop up and remove. Prevent runoff from entering drains, sewers, or streams.
Environmental Precautions:	Do not release into the environment.

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7. Handling and storage

Handling

Technical measures (e.g. Local and general ventilation): Observe good industrial hygiene practices. Low hazard for recommended handling by trained personnel.

Safe handling advice: Wear appropriate personal protective equipment. Low hazard for recommended handling by trained personnel.

Contact avoidance measures: No data available.

Storage

Safe storage conditions: Keep containers tightly closed. Keep the container in a safe place. Keep in a cool, well-ventilated place.

Safe packaging materials: No data available.

8. Exposure controls/personal protection

Control Parameters
Occupational Exposure Limits

Chemical Identity	Type	Exposure Limit Values	Source
Silane, dichlorodimethyl-, reaction products with silica	AN ESL	0.27 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
	ST ESL	14 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
Silane, dichlorodimethyl-, reaction products with silica - Respirable particles.	TWA	3 mg/m3	US. ACGIH Threshold Limit Values, as amended
Silane, dichlorodimethyl-, reaction products with silica - Inhalable particles.	TWA	10 mg/m3	US. ACGIH Threshold Limit Values, as amended
Silane, dichlorodimethyl-, reaction products with silica	REL	6 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards, as amended
	IDLH	3,000 mg/m3	US. NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended
Silane, dichlorodimethyl-, reaction products with silica - Respirable fraction.	TWA	5 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
Silane, dichlorodimethyl-, reaction products with silica - Total dust.	TWA	15 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
	TWA	15 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A, as amended
Silane, dichlorodimethyl-,	TWA	5 mg/m3	US. Tennessee. OELs. Occupational Exposure

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reaction products with silica - Respirable fraction.			Limits, Table Z1A, as amended
	TWA PEL	5 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants, as amended
Silane, dichlorodimethyl-, reaction products with silica - Total dust.	TWA PEL	10 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants, as amended
Silane, dichlorodimethyl-, reaction products with silica	TWA	0.8 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended
	TWA	20 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended
Silane, dichlorodimethyl-, reaction products with silica - Total dust.	TWA	15 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended
Silane, dichlorodimethyl-, reaction products with silica - Respirable fraction.	TWA	5 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended
	TWA	15 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended
Silane, dichlorodimethyl-, reaction products with silica - Total dust.	TWA	50 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended
Quartz (SiO2) - Respirable dust.	TWA	0.1 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
	TWA	0.1 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A, as amended
Quartz (SiO2)	AN ESL	0.27 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
	ST ESL	14 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
Quartz (SiO2) - Respirable dust.	TWA PEL	0.1 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants, as amended
Quartz (SiO2) - Total dust.	TWA PEL	0.3 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants, as amended
Quartz (SiO2) - Respirable dust.	REL	0.05 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards, as amended
Quartz (SiO2) - Respirable.	TWA	0.1 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended
	TWA	2.4 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended
Quartz (SiO2) - Respirable dust.	OSHA_ACT	0.025 mg/m3	US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053), as amended
	TWA	0.05 mg/m3	US. OSHA Specifically Regulated Substances

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			(29 CFR 1910.1001-1053), as amended
Quartz (SiO2) - Respirable dust.	PEL	0.05 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended
Quartz (SiO2)	IDLH	50 mg/m3	US. NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended
Quartz (SiO2) - Respirable fraction.	TWA	0.025 mg/m3	US. ACGIH Threshold Limit Values, as amended
Titanium oxide (TiO2) - Respirable fraction.	TWA	1 mg/m3	US. ACGIH Notice of Intended Changes (NIC) to Threshold Limit Values, as amended
Titanium oxide (TiO2) - Total dust.	TWA	10 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
	TWA	10 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A, as amended
Titanium oxide (TiO2)	ST ESL	50 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
	AN ESL	5 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
	TWA	10 mg/m3	US. ACGIH Threshold Limit Values, as amended
Titanium oxide (TiO2) - Total dust.	PEL	15 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended
Titanium oxide (TiO2)	IDLH	5,000 mg/m3	US. NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended
Aluminum oxide (Al2O3) - Total dust.	TWA	10 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
Aluminum oxide (Al2O3) - Respirable fraction.	TWA	5 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
Aluminum oxide (Al2O3) - Total dust.	TWA	10 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A, as amended
Aluminum oxide (Al2O3) - Respirable fraction.	TWA	5 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A, as amended
Aluminum oxide (Al2O3)	AN ESL	5 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
	ST ESL	50 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
Aluminum oxide (Al2O3) - Respirable fraction.	TWA PEL	5 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants, as amended
Aluminum oxide (Al2O3) - Total dust.	TWA PEL	10 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants, as amended
Aluminum oxide (Al2O3) - Respirable fraction.	TWA	1 mg/m3	US. ACGIH Threshold Limit Values, as amended
Aluminum oxide (Al2O3) - Total dust.	PEL	15 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended
Aluminum oxide (Al2O3) - Respirable fraction.	PEL	5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended

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Aluminum oxide (Al2O3) - Total dust.	TWA	50 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended
	TWA	15 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended
Aluminum oxide (Al2O3) - Respirable fraction.	TWA	15 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended
	TWA	5 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended
Iron oxide (Fe2O3) - Fume.	TWA	10 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
	TWA	10 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A, as amended
Iron oxide (Fe2O3)	ST ESL	50 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
	AN ESL	5 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
Iron oxide (Fe2O3) - Fume.	TWA PEL	5 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants, as amended
Iron oxide (Fe2O3) - Respirable fraction.	TWA	5 mg/m3	US. ACGIH Threshold Limit Values, as amended
Iron oxide (Fe2O3) - Dust and fume. - as Fe	REL	5 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards, as amended
Iron oxide (Fe2O3) - Fume.	PEL	10 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended
Iron oxide (Fe2O3) - Respirable fraction.	TWA	15 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended
Iron oxide (Fe2O3) - Total dust.	TWA	15 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended
	TWA	50 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended
Iron oxide (Fe2O3) - Respirable fraction.	TWA	5 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended
Iron oxide (Fe2O3)	IDLH	2,500 mg/m3	US. NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended
Benzene, methyl-	ST ESL	640 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
	AN ESL	1,200 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
	ST ESL	170 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended

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	AN ESL		330 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
	TWA	20 ppm		US. ACGIH Threshold Limit Values, as amended
	REL	100 ppm	375 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards, as amended
	STEL	150 ppm	560 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards, as amended
	IDLH	500 ppm		US. NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended
	TWA	100 ppm	375 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
	STEL	150 ppm	560 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
	Ceiling	300 ppm		US. OSHA Table Z-2 (29 CFR 1910.1000), as amended
	MAX. CONC	500 ppm		US. OSHA Table Z-2 (29 CFR 1910.1000), as amended
	TWA	200 ppm		US. OSHA Table Z-2 (29 CFR 1910.1000), as amended
	TWA	100 ppm	375 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A, as amended
	STEL	150 ppm	580 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A, as amended
	Ceiling	500 ppm		US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants, as amended
	STEL	150 ppm	560 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants, as amended
	TWA PEL	10 ppm	37 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants, as amended

Please refer to the latest edition of the appropriate source text and consult an industrial hygienist or similar professional, or local agencies, for further information.

Biological Limit Values
No biological exposure limits noted for the ingredient(s).

Appropriate Engineering Controls Observe good industrial hygiene practices. Low hazard for recommended handling by trained personnel.

Individual protection measures, such as personal protective equipment

Eye/face protection: Avoid contact with eyes and prolonged skin contact. Protective gloves and goggles must be used if there is a risk of direct contact or splash.

Skin Protection
Hand Protection: Material: Use suitable protective gloves if risk of skin contact.

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Skin and Body Protection:	No data available.
Respiratory Protection:	Not relevant, due to the form of the product.
Hygiene measures:	Observe good industrial hygiene practices.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	
Physical state:	Solid
Form:	Gel
Color:	Tan
Odor:	Odorless
Odor Threshold:	No data available.
Melting Point:	No data available.
Boiling Point:	No data available.
Flammability:	No data available.
Upper/lower limit on flammability or explosive limits	
Explosive limit - upper:	No data available.
Explosive limit - lower:	No data available.
Flash Point:	No data available.
Self Ignition Temperature:	No data available.
Decomposition Temperature:	No data available.
pH:	No data available.
Viscosity	
Dynamic viscosity:	Not determined.
Kinematic viscosity:	No data available.
Flow Time:	No data available.
Solubility(ies)	
Solubility in Water:	No data available.
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Vapor pressure:	No data available.
Relative density:	No data available.
Density:	No data available.
Bulk density:	No data available.
Vapor density (air=1):	No data available.

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Particle characteristics

Particle Size:	No data available.
Particle Size Distribution:	No data available.
Specific surface area:	No data available.
Surface charge/Zeta potential:	No data available.
Shape:	No data available.
Crystallinity:	No data available.
Surface treatment:	No data available.

10. Stability and reactivity

Reactivity:	Material is stable under normal conditions.
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	Material is stable under normal conditions.
Conditions to avoid:	None under normal conditions.
Incompatible Materials:	None under normal conditions.
Hazardous Decomposition Products:	Material is stable under normal conditions.

11. Toxicological information

General information: Under normal conditions of intended use, this material does not pose a risk to health.

Information on toxicological effects

Inhalation:	Under normal conditions of intended use, this material is not expected to be an inhalation hazard.
Skin Contact:	Due to the small packaging the risk of skin contact is minimal.
Eye contact:	Due to the small packaging the risk of eye contact is minimal.
Ingestion:	Due to the small packaging the risk of ingestion is minimal.

Symptoms related to the physical, chemical and toxicological characteristics

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Inhalation: No specific symptoms noted.

Skin Contact: Skin irritation is not anticipated when used normally.

Eye contact: No specific symptoms noted.

Ingestion: No specific symptoms noted.

Information on likely routes of exposure

Acute toxicity (list all possible routes of exposure)

Oral

Product: Not classified for acute toxicity based on available data.

Components:

Silane, dichlorodimethyl-, reaction products with silica	No data available.
Quartz (SiO2)	No data available.
Titanium oxide (TiO2)	LD 50 (Rat): > 25,000 mg/kg Experimental result, Supporting study LD 50 (Rat): > 11,000 mg/kg Experimental result, Supporting study LD 50 (Mouse): > 5,000 mg/kg Experimental result, Key study LD 50 (Rat): > 5,000 mg/kg Experimental result, Key study LD 50 (Rat): > 5,000 mg/kg Experimental result, Supporting study
Aluminum oxide (Al2O3)	LD 50 (Rat): > 15,900 mg/kg Experimental result, Key study
Iron oxide (Fe2O3)	LD 50 (Rat): > 5,000 mg/kg Experimental result, Key study LD 50 (Rat): > 10,000 mg/kg Experimental result, Key study
Benzene, methyl-	LD 50 (Rat): 5,580 mg/kg Experimental result, Key study LD 50 (Rat): > 5,000 mg/kg Experimental result, Supporting study

Dermal

Product: Not classified for acute toxicity based on available data.

Components:

Silane, dichlorodimethyl-, reaction products with silica	No data available.
Quartz (SiO2)	No data available.
Titanium oxide (TiO2)	No data available.
Aluminum oxide (Al2O3)	No data available.
Iron oxide (Fe2O3)	No data available.
Benzene, methyl-	LD 50 (Rabbit): > 5,000 mg/kg Experimental result, Key study

Inhalation

Product: Not classified for acute toxicity based on available data.

Components:

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Silane, dichlorodimethyl-, reaction products with silica	No data available.
Quartz (SiO2)	No data available.
Titanium oxide (TiO2)	LC 50 (Rat, 4 h): 5.09 mg/l Inhalation; 2 = reliable with restrictions; Experimental result, Key study, Inhalation LC 50 (Rat, 4 h): > 6.82 mg/l Inhalation; 2 = reliable with restrictions; Experimental result, Key study, Inhalation
Aluminum oxide (Al2O3)	NOAEL (Rat, 4 h): 10 mg/m3 Aerosol; 2 = reliable with restrictions; Read-across from supporting substance (structural analogue or surrogate), Key study, Aerosol LC 50 (Rat, 1 h): 7.6 mg/l Aerosol; 2 = reliable with restrictions; Experimental result, Key study, Aerosol
Iron oxide (Fe2O3)	LC 0 (Rat): > 210 mg/m3 Aerosol; 2 = reliable with restrictions; Experimental result, Weight of Evidence study, Aerosol
Benzene, methyl-	LC 50 (Rat, 4 h): 25.7 mg/l Vapor; 2 = reliable with restrictions; Experimental result, Key study, Vapor LC 50 (Rat, 4 h): 30 mg/l Vapor; 2 = reliable with restrictions; Experimental result, Key study, Vapor LC 50 (Rat, 4 h): 28.1 mg/l Vapor; 2 = reliable with restrictions; Experimental result, Key study, Vapor

Repeated dose toxicity

Product:	No data available.
Components:	
Silane, dichlorodimethyl-, reaction products with silica	No data available.
Quartz (SiO2)	No data available.
Titanium oxide (TiO2)	NOAEL (Rat(Female, Male), Inhalation): 5 mg/m3 Experimental result, Supporting study Inhalation NOAEL (Rat(Male), Oral, 29 d): 24,000 mg/kg Experimental result, Key study Oral NOAEL (Rat(female), Inhalation): 0.52 mg/m3 Experimental result, Supporting study Inhalation NOAEL (Rat(Male), Inhalation): 5 mg/m3 Experimental result, Supporting study Inhalation NOAEL (Mouse(female), Inhalation): 9.5 mg/m3 Experimental result, Supporting study Inhalation
Aluminum oxide (Al2O3)	NOAEL (Rat(Female, Male), Oral, 28 - 53 d): 1,000 mg/kg Read-across from supporting substance (structural analogue or surrogate), Weight of Evidence study Oral NOAEL (Rat(Female, Male), Oral, > 364 d): 322.5 mg/kg Read-across from supporting substance (structural analogue or surrogate), Weight of Evidence study Oral LOAEL (Rat(Male), Inhalation): 28 mg/m3 Read-across from supporting substance (structural analogue or surrogate), Supporting study Inhalation
Iron oxide (Fe2O3)	NOAEL (Rat(Male), Inhalation): 10.1 mg/m3 Read-across based on grouping of substances (category approach), Key study Inhalation NOAEL (Rat(Female, Male), Inhalation): 4.7 mg/m3 Read-across based on grouping of substances (category approach), Key study Inhalation
Benzene, methyl-	LOAEL (Rat(Female, Male), Inhalation, 26 Weeks): 1,500 ppm(m) Not

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	specified, Not specified Inhalation LOAEL (Rat(Female, Male), Inhalation): 600 ppm(m) Experimental result, Key study Inhalation NOAEL (Rat(Female, Male), Inhalation): 300 ppm(m) Experimental result, Key study Inhalation LOAEL (Rat(Female, Male), Inhalation): 4,710 mg/m3 Experimental result, Key study Inhalation NOAEL (Rat(Female, Male), Oral, 13 Weeks): 625 mg/kg Experimental result, Key study Oral

Skin Corrosion/Irritation

Product:	No data available.
Components:	
Silane, dichlorodimethyl-, reaction products with silica	No data available.
Quartz (SiO2)	No data available.
Titanium oxide (TiO2)	No data available.
Aluminum oxide (Al2O3)	No data available.
Iron oxide (Fe2O3)	No data available.
Benzene, methyl-	No data available.

Serious Eye Damage/Eye Irritation

Product:	No data available.
Components:	
Silane, dichlorodimethyl-, reaction products with silica	No data available.
Quartz (SiO2)	No data available.
Titanium oxide (TiO2)	Not irritating in vivo Rabbit, 24 hrs: EU Not irritating in vivo Rabbit, 48 - 72 hrs: EU Minimal irritant in vivo Rabbit, 24 hrs: EU Not irritating in vivo Rabbit, 1 hrs: EU Minimal irritant in vivo Rabbit, 48 - 72 hrs: EU Not irritating in vivo Rabbit, 24 hrs: EU Not irritating in vivo Rabbit, 48 - 72 hrs: EU Minimal irritant in vivo Rabbit, 24 - 72 hrs: EU Not irritating in vivo Rabbit, 24 - 72 hrs: EU Minimal irritant in vivo Rabbit, 1 hrs: EU Not irritating in vivo Rabbit, 1 hrs: EU
Aluminum oxide (Al2O3)	Not irritating in vivo Rabbit, 24 hrs: EU
Iron oxide (Fe2O3)	Not irritating in vivo Rabbit, 1 - 72 hrs:
Benzene, methyl-	Not irritating in vivo Rabbit, 24 - 72 hrs: EU

Respiratory or Skin Sensitization

Product:	No data available.
Components:	
Silane, dichlorodimethyl-, reaction products with silica	No data available.
Quartz (SiO2)	No data available.

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Titanium oxide (TiO2)	Skin sensitization:, in vivo/in vitro (Guinea pig): Non sensitising
Aluminum oxide (Al2O3)	Skin sensitization:, in vivo (Guinea pig): Non sensitising
Iron oxide (Fe2O3)	No data available.
Benzene, methyl-	Skin sensitization:, in vivo (Guinea pig): Non sensitising

Carcinogenicity

Product:	No data available.
Components:	
Silane, dichlorodimethyl-, reaction products with silica	No data available.
Quartz (SiO2)	No data available.
Titanium oxide (TiO2)	No data available.
Aluminum oxide (Al2O3)	No data available.
Iron oxide (Fe2O3)	No data available.
Benzene, methyl-	No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
No carcinogens present or none present in regulated quantities

ACGIH: US.ACGIH Threshold Limit Values:
No carcinogens present or none present in regulated quantities

US. National Toxicology Program (NTP) Report on Carcinogens:
No carcinogens present or none present in regulated quantities

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended:
No carcinogens present or none present in regulated quantities

Germ Cell Mutagenicity

In vitro

Product:	No data available.
Components:	
Silane, dichlorodimethyl-, reaction products with silica	No data available.
Quartz (SiO2)	No data available.
Titanium oxide (TiO2)	No data available.
Aluminum oxide (Al2O3)	No data available.
Iron oxide (Fe2O3)	No data available.
Benzene, methyl-	No data available.

In vivo

Product:	No data available.
Components:	
Silane, dichlorodimethyl-, reaction products with silica	No data available.
Quartz (SiO2)	No data available.
Titanium oxide (TiO2)	No data available.
Aluminum oxide (Al2O3)	No data available.

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Iron oxide (Fe_2O_3)	No data available.
Benzene, methyl-	No data available.

Reproductive toxicity

Product:	No data available.
Components:	
Silane, dichlorodimethyl-, reaction products with silica	No data available.
Quartz (SiO_2)	No data available.
Titanium oxide (TiO_2)	No data available.
Aluminum oxide (Al_2O_3)	No data available.
Iron oxide (Fe_2O_3)	No data available.
Benzene, methyl-	No data available.

Specific Target Organ Toxicity - Single Exposure

Product:	No data available.
Components:	
Silane, dichlorodimethyl-, reaction products with silica	No data available.
Quartz (SiO_2)	No data available.
Titanium oxide (TiO_2)	No data available.
Aluminum oxide (Al_2O_3)	No data available.
Iron oxide (Fe_2O_3)	No data available.
Benzene, methyl-	No data available.

Specific Target Organ Toxicity - Repeated Exposure

Product:	No data available.
Components:	
Silane, dichlorodimethyl-, reaction products with silica	No data available.
Quartz (SiO_2)	No data available.
Titanium oxide (TiO_2)	No data available.
Aluminum oxide (Al_2O_3)	No data available.
Iron oxide (Fe_2O_3)	No data available.
Benzene, methyl-	No data available.

Aspiration Hazard

Product:	No data available.
Components:	
Silane, dichlorodimethyl-, reaction products with silica	No data available.
Quartz (SiO_2)	No data available.
Titanium oxide (TiO_2)	No data available.
Aluminum oxide (Al_2O_3)	No data available.
Iron oxide (Fe_2O_3)	No data available.
Benzene, methyl-	No data available.

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Information on health hazards

Other hazards

Product:	No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product:	No data available.
Components:	
Silane, dichlorodimethyl-, reaction products with silica	No data available.
Quartz (SiO2)	No data available.
Titanium oxide (TiO2)	EC 50 (96 h): > 9,051 mg/l Experimental result, Not specified NOAEL (Oncorhynchus mykiss, 96 h): >= 100 mg/l Experimental result, Weight of Evidence study LC 50 (Pimephales promelas, 96 h): > 1,000 mg/l Experimental result, Weight of Evidence study LC 50 (Cyprinodon variegatus, 96 h): > 240 - < 370 mg/l Experimental result, Not specified NOAEL (Pimephales promelas, 96 h): >= 1,000 mg/l Experimental result, Weight of Evidence study
Aluminum oxide (Al2O3)	LC 50 (Pimephales promelas, 96 h): 35 mg/l Experimental result, Weight of Evidence study LC 50 (Oncorhynchus mykiss, 96 h): 14.6 mg/l Experimental result, Weight of Evidence study
Iron oxide (Fe2O3)	LC 90 (Danio rerio, 96 h): +/- 100,000 mg/l Experimental result, Key study LC 50 (Pimephales promelas, 96 h): 14.4 mg/l Experimental result, Supporting study LC 50 (Oncorhynchus mykiss, 96 h): 18.29 mg/l Experimental result, Supporting study LC 0 (Danio rerio, 96 h): >= 50,000 mg/l Experimental result, Key study LC 50 (Lepomis macrochirus, 96 h): 20 mg/l Experimental result, Supporting study
Benzene, methyl-	LC 50 (Pimephales promelas, 96 h): 33.9 mg/l LC 50 (Fathead minnow (Pimephales promelas), 96 h): 21 - 34 mg/l Mortality LC 50 (Oncorhynchus kisutch, 96 h): 5.5 mg/l Experimental result, Key study

Aquatic Invertebrates

Product:	No data available.
Components:	
Silane, dichlorodimethyl-	No data available.

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, reaction products with silica	
Quartz (SiO2)	No data available.
Titanium oxide (TiO2)	EC 50 (Daphnia magna, 48 h): > 100 mg/l Experimental result, Not specified EC 50 (Water flea (Daphnia magna), 48 h): > 1,000 mg/l Intoxication EC 50 (Daphnia magna, 48 h): > 100 mg/l Experimental result, Supporting study EC 50 (Daphnia magna, 48 h): > 1,000 mg/l Experimental result, Weight of Evidence study EC 50 (Daphnia magna, 48 h): > 1,000 mg/l Experimental result, Weight of Evidence study
Aluminum oxide (Al2O3)	EC 50 (Ceriodaphnia dubia, 48 h): 1.9 mg/l Experimental result, Weight of Evidence study
Iron oxide (Fe2O3)	EC 50 (Daphnia magna, 48 h): > 100 mg/l Experimental result, Key study EC 50 (Haliotis rubra, 48 h): 5.11 mg/l Experimental result, Supporting study
Benzene, methyl-	LC 50 (Ceriodaphnia dubia, 2 d): 3.78 mg/l Experimental result, Key study

Toxicity to Aquatic Plants

Product:	No data available.
Components:	
Silane, dichlorodimethyl-, reaction products with silica	No data available.
Quartz (SiO2)	No data available.
Titanium oxide (TiO2)	No data available.
Aluminum oxide (Al2O3)	No data available.
Iron oxide (Fe2O3)	No data available.
Benzene, methyl-	No data available.

Toxicity to microorganisms

Product:	No data available.
Components:	
Silane, dichlorodimethyl-, reaction products with silica	No data available.
Quartz (SiO2)	No data available.
Titanium oxide (TiO2)	No data available.
Aluminum oxide (Al2O3)	No data available.
Iron oxide (Fe2O3)	No data available.
Benzene, methyl-	No data available.

Chronic hazards to the aquatic environment:

Fish

Product:	No data available.
Components:	
Silane, dichlorodimethyl-	No data available.

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, reaction products with silica	
Quartz (SiO2)	No data available.
Titanium oxide (TiO2)	ED 0 (Phoxinus phoxinus, 30 d): >= 1,000 mg/l (Static) Experimental result, Supporting study LC 0 (Coregonus autumnalis migratorius G., 30 d): 3 mg/l (Static) Experimental result, Supporting study
Aluminum oxide (Al2O3)	EC 50 (Pimephales promelas, 7 d): 1.453 mg/l (semi-static) Experimental result, Weight of Evidence study EC 50 (Pimephales promelas, 7 d): 1.861 mg/l (semi-static) Experimental result, Weight of Evidence study
Iron oxide (Fe2O3)	NOAEL (Pimephales promelas, 33 d): 1.6 mg/l Experimental result, Supporting study NOAEL (Pimephales promelas, 12 Months): < 1.5 mg/l Experimental result, Supporting study NOAEL (Pimephales promelas, 33 d): 1 mg/l Experimental result, Supporting study NOAEL (Salvelinus fontinalis, 35 Weeks): 6 mg/l Experimental result, Supporting study
Benzene, methyl-	NOAEL (Oncorhynchus kisutch, 40 d): 1.39 mg/l (flow-through) Experimental result, Key study

Aquatic Invertebrates

Product:	No data available.
Components:	
Silane, dichlorodimethyl-, reaction products with silica	No data available.
Quartz (SiO2)	No data available.
Titanium oxide (TiO2)	EC 50 (Nitokra spinipes, 13 d): 107.4 mg/l (Partially static renewed, partially continuous) Experimental result, Supporting study LC 100 (Daphnia magna, 18 d): 1,000 mg/l (Static) Experimental result, Supporting study EC 50 (Nitokra spinipes, 13 d): 2.03 mg/l (Partially static renewed, partially continuous) Experimental result, Supporting study EC 100 (Daphnia magna, 30 d): 500 mg/l (Static) Experimental result, Supporting study
Aluminum oxide (Al2O3)	EC 50 (Ceriodaphnia dubia, 7 d): 2.374 mg/l (semi-static) Experimental result, Weight of Evidence study EC 50 (Daphnia magna, 21 d): 1.097 mg/l (semi-static) Experimental result, Weight of Evidence study
Iron oxide (Fe2O3)	EC 50 (Leptophlebia marginata, 5 d): 8.48 mg/l Experimental result, Supporting study NOAEL (Arrenurus manubriator, 15 d): 800 mg/l (semi-static) Experimental result, Supporting study EC 50 (Leptophlebia marginata, 24 d): 73.07 mg/l Experimental result, Supporting study EC 50 (Leptophlebia marginata, 5 d): 19.84 mg/l Experimental result, Supporting study NOAEL (Daphnia magna, 21 d): 2 mg/l Experimental result, Supporting study

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Benzene, methyl-	LOAEL (Ceriodaphnia dubia, 7 d): 2.76 mg/l (daily renewal, closed) Experimental result, Key study EC 50 (Ceriodaphnia dubia, 7 d): 3.23 mg/l (daily renewal, closed) Experimental result, Key study

Toxicity to Aquatic Plants

Product:	No data available.
Components:	
Silane, dichlorodimethyl-, reaction products with silica	No data available.
Quartz (SiO2)	No data available.
Titanium oxide (TiO2)	No data available.
Aluminum oxide (Al2O3)	No data available.
Iron oxide (Fe2O3)	No data available.
Benzene, methyl-	No data available.

Toxicity to microorganisms

Product:	No data available.
Components:	
Silane, dichlorodimethyl-, reaction products with silica	No data available.
Quartz (SiO2)	No data available.
Titanium oxide (TiO2)	No data available.
Aluminum oxide (Al2O3)	No data available.
Iron oxide (Fe2O3)	No data available.
Benzene, methyl-	No data available.

Persistence and Degradability

Biodegradation

Product:	No data available.
Components:	
Silane, dichlorodimethyl-, reaction products with silica	No data available.
Quartz (SiO2)	No data available.
Titanium oxide (TiO2)	No data available.
Aluminum oxide (Al2O3)	No data available.
Iron oxide (Fe2O3)	No data available.
Benzene, methyl-	73 % Experimental result, Weight of Evidence study Detected in water. 86 % Experimental result, Weight of Evidence study Detected in water. 53 % Experimental result, Weight of Evidence study Detected in water. 100 % (4 d) Not specified, Not specified Detected in water. 70 % Experimental result, Weight of Evidence study Detected in water.

BOD/COD Ratio

Product:	No data available.
Components:	

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Silane, dichlorodimethyl-, reaction products with silica	No data available.
Quartz (SiO2)	No data available.
Titanium oxide (TiO2)	No data available.
Aluminum oxide (Al2O3)	No data available.
Iron oxide (Fe2O3)	No data available.
Benzene, methyl-	No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product:	No data available.
Components:	
Silane, dichlorodimethyl-, reaction products with silica	No data available.
Quartz (SiO2)	No data available.
Titanium oxide (TiO2)	Oncorhynchus mykiss, Bioconcentration Factor (BCF): 19 Experimental result, Key study Aquatic sediment Oncorhynchus mykiss, Bioconcentration Factor (BCF): 67 Experimental result, Key study Aquatic sediment Oncorhynchus mykiss, Bioconcentration Factor (BCF): 20 Experimental result, Key study Aquatic sediment Cyprinus carpio, Bioconcentration Factor (BCF): 74 Experimental result, Supporting study Aquatic sediment Oncorhynchus mykiss, Bioconcentration Factor (BCF): 34 - 352 Experimental result, Key study Aquatic sediment
Aluminum oxide (Al2O3)	No data available.
Iron oxide (Fe2O3)	No data available.
Benzene, methyl-	No data available.

Partition Coefficient n-octanol / water (log Kow)

Product:	No data available.
Components:	
Silane, dichlorodimethyl-, reaction products with silica	No data available.
Quartz (SiO2)	No data available.
Titanium oxide (TiO2)	No data available.
Aluminum oxide (Al2O3)	No data available.
Iron oxide (Fe2O3)	No data available.
Benzene, methyl-	Log Kow: 2.73

Mobility in soil:

Product	No data available.
Components:	
Silane, dichlorodimethyl-, reaction products with silica	No data available.
Quartz (SiO2)	No data available.

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Titanium oxide (TiO2)	No data available.
Aluminum oxide (Al2O3)	No data available.
Iron oxide (Fe2O3)	No data available.
Benzene, methyl-	No data available.

Results of PBT and vPvB assessment:

Product	No data available.
Components:	
Silane, dichlorodimethyl-, reaction products with silica	No data available.
Quartz (SiO2)	No data available.
Titanium oxide (TiO2)	No data available.
Aluminum oxide (Al2O3)	No data available.
Iron oxide (Fe2O3)	No data available.
Benzene, methyl-	No data available.

Other adverse effects:

Other hazards
Product: No data available.

13. Disposal considerations

Disposal methods: Dispose of waste and residues in accordance with local authority requirements.

Contaminated Packaging: No data available.

14. Transport information

DOTUN number or ID number:	Not regulated.
UN Proper Shipping Name:	Not regulated.
Transport Hazard Class(es)	
Class:	Not regulated.
Label(s):	Not regulated.
Packing Group:	Not regulated.
Marine Pollutant:	Not regulated.
Limited quantity	Not regulated.
Excepted quantity	Not regulated.

Special precautions for user: Not regulated.

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IMDG

UN number or ID number:	Not regulated.
UN Proper Shipping Name:	Not regulated.
Transport Hazard Class(es)	
Class:	Not regulated.
Subsidiary risk:	Not regulated.
EmS No.:	Not regulated.
Packing Group:	Not regulated.
Environmental Hazards	
Marine Pollutant:	Not regulated.
Special precautions for user:	Not regulated.

IATA

UN number or ID number:	Not regulated.
Proper Shipping Name:	Not regulated.
Transport Hazard Class(es):	
Class:	Not regulated.
Subsidiary risk:	Not regulated.
Packing Group:	Not regulated.
Environmental Hazards	
Marine pollutant:	Not regulated.
Special precautions for user:	Not regulated.

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

None present or none present in regulated quantities.

US. Toxic Substances Control Act (TSCA) Section 5(a)(2) Final Significant New Use Rules (SNURs) (40 CFR 721, Subpt E)

None present or none present in regulated quantities.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended

Chemical Identity	OSHA hazard(s)
Quartz (SiO_2)	kidney effects lung effects Cancer immune system effects

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CERCLA Hazardous Substance List (40 CFR 302.4):

Chemical Identity
Benzene, methyl-

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Not classified

US. EPCRA (SARA Title III) Section 304 Extremely Hazardous Substances Reporting Quantities and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Hazardous Substances
None present or none present in regulated quantities.

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required
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.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

Chemical Identity
Benzene, methyl-

US State Regulations

US. California Proposition 65

WARNING: This product can expose you to chemicals including, Quartz (SiO2)Titanium oxide (TiO2) which is [are] known to the State of California to cause cancer.

This product can expose you to chemicals including, Benzene, methyl- which is [are] known to the State of California to cause birth defects or other reproductive harm.
For more information go to www.P65Warnings.ca.gov.

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

Chemical Identity
Silane, dichlorodimethyl-, reaction products with silica
Quartz (SiO2)
Titanium oxide (TiO2)
Aluminum oxide (Al2O3)
Iron oxide (Fe2O3)
Benzene, methyl-

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US. Massachusetts RTK - Substance List

Chemical Identity
Silane, dichlorodimethyl-, reaction products with silica
Quartz (SiO2)

US. Pennsylvania RTK - Hazardous Substances

Chemical Identity
Silane, dichlorodimethyl-, reaction products with silica

US. Rhode Island RTK

Chemical Identity
Silane, dichlorodimethyl-, reaction products with silica

International regulations

Montreal protocol
Not applicable

Stockholm convention
Not applicable

Rotterdam convention
Not applicable

Kyoto protocol
Not applicable

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

Issue Date:	01/03/2022
Version #:	16.3
Further Information:	No data available.

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