

**W. R. GRACE**  
MATERIAL SAFETY DATA SHEET

Product Name: Force 10,000 D  
MSDS ID Number: D-06564

MSDS Date: 10/30/2009

**SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

**Product Name:** Force 10,000 D  
**MSDS Number:** D-06564  
**Cancelled MSDS Number:** D-06106  
**MSDS Date:** 10/30/2009  
**Chemical Family Name:** Condensed Amorphous Silica Fume  
**Product Use:** High Strength Concrete Additive  
**Chemical Formula:** Mixture-NA  
**CAS # (Chemical Abstracts Service Number):** Mixture-NA

**Manufactured by:**

W.R.Grace & Co.-Conn. 62 Whittemore Avenue Cambridge, MA 02140	Grace Canada, Inc. 294 Clements Road West Ajax, Ontario L1S 3C6
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**In Case of Emergency Call:**

In USA: (617) 876-1400      In Canada: (905) 683-8561

**SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS**

Ingredient	CAS#	Percent (max)
Silicon Dioxide, amorphous	69012-64-2	> 85
Carbon	7440-44-0	< 10
Magnesium Oxide	1309-48-4	< 5
Iron Oxide	1309-37-1	< 5
Calcium Oxide	1305-78-8	< 5
Silicon dioxide, crystalline (Quartz)	014808-60-7	< 0.5

**SECTION 3 - HAZARDS IDENTIFICATION**

**Emergency Overview:**

**Caution!**

Causes eye irritation.  
Causes skin irritation.  
Causes respiratory irritation  
May cause risk of lung disease (i.e. silicosis and/or lung cancer).

**HMIS Rating:**

Health: 1\*  
Flammability: 0  
Reactivity: 0  
Personal Protective Equipment: B (See Section 8)

**Potential Health Effects:**

**Inhalation:** May be irritating if inhaled resulting in coughing and sneezing.  
May aggravate chronic respiratory conditions such as asthma or bronchitis.  
Long-term inhalation of dust may increase risk of contracting pneumoconiosis ("dusty lungs") and decrease lung function.  
Prolonged inhalation of respirable crystalline silica dust can result in lung disease (i.e. silicosis and/or lung cancer). Symptoms include coughing, shortness of breath, wheezing and reduced pulmonary function.  
**Eye Contact:** Eye contact causes irritation.  
**Skin Contact:** Skin contact causes irritation.  
May dry skin.  
**Skin Absorption:** Not expected to be harmful if absorbed through the skin.  
**Ingestion:** Ingestion not expected to be harmful.

**SECTION 4 - FIRST AID MEASURES:**

**Skin Contact:** Wash with soap and water.  
If discomfort or irritation persists, consult a physician.

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Remove contaminated clothing and wash before reuse.

**Eye Contact:** Flush eyes with water for at least 15 minutes while holding eyelids open.

If discomfort or irritation persists, consult a physician.

**Ingestion:** Do not induce vomiting.

Never give anything by mouth to an unconscious person.

If discomfort or irritation persists, consult a physician.

**Inhalation:** If symptoms develop, get fresh air. If symptoms persist, consult a physician.

If breathing has stopped, give artificial respiration then oxygen if needed.

**SECTION 5 - FIRE AND EXPLOSION HAZARD DATA**

**Flash Point:** Not Applicable

**Flash Point Method:** Not Applicable

**Lower Explosion Limit:** Not Available

**Upper Explosion Limit:** Not Available

**Auto-ignition Temperature:** Not Available

**NFPA Rating:**

**Health:** 0

**Flammability:** 0

**Reactivity:** 0

**Extinguishing Media:** Not Applicable. Product will not burn.

**Special Fire Fighting Procedures:** None

No special procedures specific to this product.

**Unusual Fire and Explosion Hazards:** None unless noted below.

**SECTION 6 - ACCIDENTAL RELEASE MEASURES:**

**Spills/Leaks:** Use proper personal protective equipment. Do not flush to sewer or allow entry to waterways. Keep unnecessary people away.

If spilled, prevent material from entering water systems. Observing the listed Precautionary Measures found in Section 7 of this document. Dry spills should be immediately swept up and placed in a suitable container to prevent further release of material.

**SECTION 7 - HANDLING AND STORAGE**

**Precautionary Measures:** Avoid contact with eyes, skin and clothing.

Avoid creating and inhaling airborne dust or particulates.

Practice good personal hygiene to avoid ingestion.

Use only with adequate ventilation.

Wash clothing before reuse.

Equip mixers with dust covers.

Provide respiratory protection if needed.

Wear skin and eye protection to avoid contact with dust.

Use anti-slip surfaces on working platforms.

FOR PROFESSIONAL USE ONLY. KEEP OUT OF CHILDREN'S REACH.

**SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTIVE EQUIPMENT**

**EXPOSURE GUIDELINES (US)**

Ingredient	ACGIH TLV			OSHA PEL			Other
	TWA	STEL	Ceiling	TWA	STEL	Ceiling	
Silicon Dioxide, amorphous	2 mg/m3 TWA respirable fraction	-	-	15 mg/m3 TWA total particulate; 5 mg/m3 respirable fraction	-	-	-
Iron Oxide	5 mg/m3 TWA total particulate	-	-	10 mg/m3 TWA total particulate	-	-	-
Calcium Oxide	3.5 mg/m3 TWA total	-	-	5 mg/m3 TWA total particulate	-	-	-
Silicon Dioxide, crystalline (quartz)	0.05 mg/m3 TWA respirable fraction	-	-	0.1 mg/m3 TWA respirable fraction	-	-	-

In addition to the exposure limits referenced above, the following non-specific limits for dust apply to this product:

- OSHA; 15 mg/m3-TWA for Total Dust and 5 mg/m3-TWA as Respirable Dust
- ACGIH; 10 mg/m3-TWA as Total Dust and 3 mg/m3-TWA as Respirable Dust.

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**EXPOSURE GUIDELINES (CANADA)**

Employers should consult local Provincial regulatory limits for exposure guidelines which may vary locally.

**Engineering Controls:** Exhaust fans may be necessary when mixing in enclosed areas.

**Personal Protective Equipment:**

**Respiratory Protection:** Silica fume contains micron-sized particles. Wear approved respiratory protection (generally a N-100 or P-100 dust mask is appropriate) to prevent employee exposure from exceeding the limits specified.

**Skin Protection:** Work gloves or hand creams are recommended to prevent drying of skin. If irritation is noted, impervious gloves should be worn.

**Eye Protection:** At minimum, safety glasses with side shields should be worn where exposure to airborne dust is likely.

**Work/Hygiene Practices:** Use good personal hygiene practices.

Use bag opening and disposal procedures that minimize dust release. After each work shift, workers should shower with soap and water. Work clothing should be changed daily.

**SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State:</b>	Solid
<b>Appearance/Odor:</b>	Light grey powder. Earthy odor.
<b>Odor Threshold: (ppm)</b>	Not Determined
<b>pH:</b>	5-7 in solution
<b>Vapor Pressure: (Mm Hg)</b>	Unknown
<b>Vapor Density: (Air = 1)</b>	Unknown
<b>Solubility In Water:</b>	Unknown
<b>Specific Gravity: (Water = 1)</b>	Not Available
<b>Evaporation Rate: (Butyl Acetate = 1)</b>	Unknown
<b>Boiling Point:</b>	Not Applicable
<b>Viscosity:</b>	Unknown
<b>Bulk Density: (Pounds/Cubic Foot)(Pcf)</b>	20-40 PCF
<b>% Volatiles (gr/L): (70°F) (21°C)</b>	None

**SECTION 10 - STABILITY AND REACTIVITY**

<b>Chemical Stability:</b>	Stable
<b>Conditions To Avoid:</b>	None known for this product.
<b>Hazardous Polymerization:</b>	Will not polymerize.
<b>Hazardous Decomposition Products:</b>	Product does not decompose

**SECTION 11 - TOXICOLOGICAL INFORMATION**

<b><u>Ingredient(No data unless listed.)</u></b>	<b><u>CAS Number</u></b>	<b><u>LD50 and LC50</u></b>
Silicon Dioxide, amorphous	69012-64-2	Oral LD50 Rat: 3160 mg/kg

**Carcinogenicity:**

Ingredient	IARC Group 1	IARC Group 2A	IARC Group 2B	NTP Known	NTP Suspect	OSHA
Silicon Dioxide, amorphous	No	No	No	No	No	No
Carbon	No	No	No	No	No	No
Magnesium Oxide	No	No	No	No	No	No
Iron Oxide	No	No	No	No	No	No
Calcium Oxide	No	No	No	No	No	No
Silicon dioxide, crystalline (Quartz)	Yes	No	No	Yes	Yes	Yes

<b>Mutagenicity:</b>	Not applicable.
<b>Teratogenicity:</b>	Not applicable.
<b>Reproductive Toxicity:</b>	Not applicable.

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**SECTION 12 - ECOLOGICAL INFORMATION**

**Environmental Fate:** No data available for product.  
**Ecotoxicity:** No data available for product.

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**SECTION 13 - DISPOSAL CONSIDERATIONS**

**Waste Disposal Procedures:** Consult all regulations (federal, state, provincial, local) or a qualified waste disposal firm when characterizing waste for disposal. According to EPA (40 CFR § 261), waste of this product is not defined as hazardous. Dispose of waste in accordance with all applicable regulations.  
Wastes of this product such as empty bags and excess material are typically not defined as hazardous.

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**SECTION 14 - TRANSPORTATION INFORMATION**

**Proper Shipping Name:** Not Applicable  
**UN/NA Number:** Not Applicable  
**Domestic Hazard Class:** Nonhazardous  
**Surface Freight Classification:** Silica, N.O.I.  
**Label/Placard Required:** Not Applicable

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**SECTION 15 - REGULATORY INFORMATION**

**REGULATORY CHEMICAL LISTS:**

**CERCLA (Comprehensive Response Compensation and Liability Act):**  
**(None present unless listed below)**

<u>Chemical Name</u>	<u>CAS #</u>	<u>Wt %</u>	<u>CERCLA RQ</u>
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**SARA Title III (Superfund Amendments and Reauthorization Act)**

**SARA Section 312/Tier I & II Hazard Categories:**

Health Immediate (acute)	Yes
Health Delayed (chronic)	Yes
Flammable	No
Reactive	No
Pressure	No

**302 Reportable Ingredients (Identification Threshold 1%):**

<u>Chemical Name</u>	<u>CAS #</u>	<u>Wt %</u>	<u>SARA 302 TPQ</u>
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**313 Reportable Ingredients (Chemicals present below reporting threshold are exempt):**

<u>Chemical Name</u>	<u>CAS #</u>	<u>Wt %</u>
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**National Volatile Organic Compound Emission Standards For Architectural Coatings:**

**Volatile Organic Content:** (gr/L) 0

**WHMIS Classification(s):** D2 A

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR). This MSDS contains all the information required by the CPR.

**State Regulatory Information:**

**California Proposition 65:** WARNING! This product contains substances known to the state of California to cause cancer, birth defects or other reproductive harm.

**Massachusetts Hazardous Substance List(Identification threshold 0.001%(1ppm)):**

<u>Chemical Name</u>	<u>CAS #</u>	<u>Wt %</u>
Quartz	014808-60-7	0.5

**New Jersey Hazardous Substance List(Identification threshold (0.1%)):**

<u>Chemical Name</u>	<u>CAS #</u>	<u>Wt %</u>
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**Pennsylvania Hazardous Substance List(Identification threshold 0.01%):**

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**Chemical Name**

**CAS #**

**Wt %**

**CHEMICAL INVENTORY STATUS:**

**All chemicals in this product are listed or exempt from listing in the following countries:**

<b>US</b>	<b>CANADA</b>		<b>EUROPE</b>	<b>AUSTRALIA</b>	<b>JAPAN</b>	<b>KOREA</b>	<b>PHILIPPINES</b>
TSCA	DSL	NDSL	EINECS/ELINCS	AICS	ENCS	ECL	PICCS
Yes	Yes	No	Yes	Yes	Yes	Yes	Yes

**SECTION 16 - OTHER INFORMATION**

**Non-Hazardous Ingredient Disclosure:**

**Chemical Name**

**CAS Number**

**Prepared by:**

EH&S Department

**Approved by:**

EH&S Department

**Approved Date:**

10/30/2009

**Disclaimer:**

"The data included herein are presented in accordance with various environment, health and safety regulations. It is the responsibility of a recipient of the data to remain currently informed on chemical hazard information, to design and update its own program and to comply with all national, federal, state and local laws and regulations applicable to safety, occupational health, right-to-know and environmental protection."