# MATERIAL SAFETY DATA SHEET

## SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

**Manufacturer's name and address:**

Ardex Engineered Cements
400 Ardex Park Drive
Aliquippa, PA, US
15001

**Supplier's name and address:**

Refer to Manufacturer

Information Telephone No. : (724) 203-5000
Visit our Website: http://www.ardex.com

**24 Hr. Emergency Tel #** : CHEM-TEL: 1-800-255-3924 OR 1-813-248-0585 (call collect)

**Product Identifier** : **ARDEX FG-C Grout**

| | | | |
|---|---|---|---|
| **Chemical Name** | : N/Ap | **Chemical Family** | : N/Ap |
| **Chemical Formula** | : N/Ap | **Trade Name/Synonyms** | : ARDEX FG-C Grout |
| **Molecular Weight** | : N/Ap | **Material Use** | Unsanded Grout |

**WHMIS Classification** : Class D2A (Materials Causing Other Toxic Effects, Very Toxic Material); Class E (Corrosive Material)

## SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

| Ingredients | CAS# | %(weight) | ACGIHTLV TWA | ACGIHTLV STEL | OSHAPEL PEL | OSHAPEL STEL |
|---|---|---|---|---|---|---|
| **Limestone** | **1317-65-3** | 30.0 - 60.0 | **2 mg/m³ (respirable fraction)** | **N/av** | **15 mg/m³ (total dust); 5 mg/m³ (respirable)** | **N/Av** |
| **Portland cement** | **65997-15-1** | 30.0 - 60.0 | **10 mg/m³** | **N/Av** | **15 mg/m³ (total dust); 5 mg/m³ (respirable)** | **N/Av** |
| **Crystalline silica, quartz** | **14808-60-7** | 0.1 – 1.0 | **0.025 mg/m³ (respirable)** | **N/Av** | **0.1 mg/m³ (respirable) (final rule limit)** | **N/Av** |
| **Depending on color, Ardex FG-C grout may contain one or more of the following pigments.** | | | | | | |
| **Titanium Dioxide** | **13463-67-7** | < 5.0 | **10 mg/m³** | **N/Av** | **15 mg/m³** | **N/Av** |
| **Iron Oxide, $Fe_3O_4$** | **1317-61-9** | < 10 | **N/Av** | **N/Av** | **N/Av** | **N/Av** |
| **Chromium Oxide** | **1308-38-9** | < 5 | **0.5 mg/m³** | **N/av** | **0.5 mg/m³** | **N/av** |
| **Iron (III) Oxide, $Fe_2O_3$** | **1309-37-1** | < 5 | **5 mg/m³ (respirable fraction)** | **N/av** | **10 mg/m³ (fume)** | **N/av** |

This material is classified as hazardous under OSHA regulations (29CFR 1910.1200).

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## SECTION 3 - HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW**

Gray or Pigmented Powder. No odour.
DANGER!
Corrosive. Causes eye burns. May cause skin burns. Contact with wet material, or moist areas of the skin, causes skin burns.
Symptoms may be delayed. May cause respiratory irritation.
Contains material which can cause lung damage. Possible cancer hazard - contains material which may cause cancer.

***POTENTIAL HEALTH EFFECTS***

**Target organs** : Lungs; eyes; Skin.

**Routes of exposure** : *Inhalation:* YES *Skin Absorption:* NO *Skin & Eyes:* YES *Ingestion:* YES

**Signs and symptoms of short-term (acute) exposure**

*Inhalation* : May cause severe irritation to the nose, throat and respiratory tract. Symptoms may include coughing, shortness of breath, wheezing and reduced lung function.

*Skin* : Direct contact may cause mild to severe irritation with possible burns. Contact with wet material, or moist areas of the skin, causes skin burns. Skin thickening, cracking, or fissuring may also occur. Symptoms may be delayed.

*Eyes* : Direct contact may strongly irritate or burn the eyes. Could cause blindness.

*Ingestion* : May cause severe irritation to the mouth, throat and stomach. Symptoms may include burning pain, vomiting and diarrhea.

**Effects of long-term (chronic) exposure**

: Prolonged inhalation may cause adverse lung effects with symptoms including coughing, mucous production and difficulty breathing. Repeated or prolonged inhalation of fine dusts may cause severe scarring of the lungs, a disease called silicosis, and alveolar proteinosis (lower lung disease). Symptoms may include coughing, shortness of breath and eventually severe respiratory impairment.

**Conditions aggravated by overexposure**

: Pre-existing skin, eye and respiratory disorders.

**Carcinogenic status** : Cancer hazard. See TOXICOLOGICAL INFORMATION, Section 11.

**Additional health hazards** : See TOXICOLOGICAL INFORMATION, Section 11.

**Potential environmental effects**

: See ECOLOGICAL INFORMATION, Section 12.

## SECTION 4 - FIRST AID MEASURES

**Inhalation** : If inhaled, move to fresh air. If breathing is difficult, give oxygen by qualified medical personnel only. If not breathing, clear airway and start artificial respiration. Seek immediate medical attention/advice.

**Skin contact** : Remove/Take off immediately all contaminated clothing. Flush affected skin with gently flowing lukewarm water for at least 20 minutes. Seek immediate medical attention/advice.

**Eye contact** : Immediately flush eyes thoroughly with running water for at least 20 to 30 minutes. Seek immediate medical attention/advice.

**Ingestion** : Never give anything by mouth to an unconscious person. Rinse mouth with water. Do NOT induce vomiting. Have victim drink one to two glasses of water. Seek immediate medical attention/advice.

**Notes For Physician** : Treat symptomatically.

## SECTION 5 - FIRE FIGHTING MEASURES

**Fire hazards/conditions of flammability**

: Not flammable under normal conditions of use. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure. Contact with water may cause hydration, and formation of caustic alkaline material. Hazardous combustion products may include very small amounts of hydrogen gas.

**Flammability classification (OSHA 29 CFR 1910.1200)**

: Non-flammable.

**Flash point** : Not applicable.

**Flash point Method** : Not applicable.

**Auto-ignition temperature** : N/Av

**Lower flammable limit (% by vol.)**

: Not applicable.

**Upper flammable limit (% by vol.)**

: Not applicable.

**Oxidizing properties** : None.

**Flame Projection Length** : Not applicable. **Flashback observed** : Not applicable.

**Explosion data: Sensitivity to mechanical impact / static discharge**
: Not available.

**Suitable extinguishing media** : Dry chemical, carbon dioxide and foam. Do not use water. Contact with water may cause hydration, and formation of caustic alkaline material.

**Special fire-fighting procedures/equipment**
: Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame. After fires have been extinguished, carefully clean all equipment and surfaces exposed to fumes.

**Hazardous combustion products**
: Sulphur oxides; calcium oxide; Carbon oxides; Calcium carbonate; Hydrogen; Calcium oxalate; formaldehyde.

## SECTION 6 - ACCIDENTAL RELEASE MEASURES

**Personal precautions** : Corrosive! Wear chemically resistant personal protective equipment during cleanup. Restrict access to area until completion of clean-up. All persons dealing with clean-up should wear the appropriate chemically protective equipment. Refer to Section 8 on this Safety Data Sheet, EXPOSURE CONTROLS / PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.

**Environmental precautions** : Do not allow product to enter waterways. Do not allow material to contaminate ground water system.

**Spill response/cleanup** : Ventilate area of release. Eliminate all ignition sources. Stop spill or leak at source if safely possible. Contain material, preventing it from entering sewer lines or waterways. Using HEPA vacuum, or other dustless methods, gather up spilled material and place in suitable container for later disposal (see section 13). Avoid adding water, material becomes alkaline when wet. Notify the appropriate authorities as required.

**Prohibited materials** : Avoid adding water, material becomes alkaline when wet.

**Special spill response procedures**
: If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8002).
US CERCLA Reportable quantity (RQ): None reported.

## SECTION 7 - HANDLING AND STORAGE

**Safe Handling procedures** : Corrosive! Wear chemically resistant protective equipment during handling. Use in a well-ventilated area. Training the workers on the potential health hazards associated with product vapor, dust or fume is important. Secondary inhalation exposures could occur when cleaning equipment, or when removing or laundering the clothing. Do not breathe vapours/dust. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Avoid wet or humid conditions. Keep away from acids and incompatibles. Avoid and control operations which create dust. Keep containers tightly closed when not in use. Wash thoroughly after handling.

**Storage requirements** : Store in a cool, dry, well-ventilated area. No smoking in the area. Do not store near any incompatible materials (see Section 10). Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Protect against physical damage.

**Incompatible materials** : See Section 10.

**Special packaging materials** : Always keep in containers made of the same materials as the supply container.

## SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

**Ventilation and engineering measures**
: Use general or local exhaust ventilation to maintain air concentrations below recommended exposure limits.

**Respiratory protection** : Respiratory protection is required if the concentrations exceed the TLV. If the TLV is exceeded, a NIOSH/MSHA-approved respirator is advised.

**Skin protection** : Impervious gloves must be worn when using this product. Advice should be sought from glove suppliers.

**Eye / face protection** : Chemical goggles must be worn to prevent dusts from entering the eyes.

**Other protective equipment** : Where extensive exposure to product is possible, use resistant coveralls, apron and boots to prevent contact. An eyewash station and safety shower should be made available in the immediate working area.

**General hygiene considerations**
: Avoid contact with eyes, skin and clothing. Do not breathe vapours/dust. Do not eat, drink or smoke when using this product. Clean all equipment and clothing, and shower with mild soap and water to remove dusts, at end of each work shift.

**Permissible exposure levels** : For individual ingredient exposure levels, see Section 2.

## SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

**Physical state** : fine powder (Solid)
**Appearance** : Gray or pigmented powder.
**Odour** : No odour.
**Odour threshold** : N/Av
**pH** : 10.5 - 13.0
**Boiling point** : N/Av
**Specific gravity** : 2.7 - 3.2
**Melting/Freezing point** : N/Av
**Coefficient of water/oil distribution** : N/Av
**Vapour pressure (mmHg @ 20° C / 68° F)** : N/Av
**Solubility in water** : < 75 g/L
**Vapour density (Air = 1)** : N/Av
**Evaporation rate (n-Butyl acetate = 1)** : N/Av
**Volatile organic Compounds (VOC's)** : 0 g/L
**Volatiles (% by weight)** : N/Av
**Particle size** : N/Av
**General Info.** : Weight / Gallon: N/Av

## SECTION 10 - REACTIVITY AND STABILITY DATA

**Stability and reactivity** : Stable under the recommended storage and handling conditions prescribed. Contact with water may cause hydration and formation of caustic calcium hydroxide.

**Hazardous polymerization** : Hazardous polymerisation does not occur.

**Conditions to avoid** : Avoid wet or humid conditions. Extreme heat.

**Materials To Avoid And Incompatibility**
: Acids; Oxidizing agents; Ammonium salts; Water. Avoid contact with aluminum.

**Hazardous decomposition products**
: Contact with acids may cause decomposition and release of formic acid fumes. Refer to Section 5 for additional 'Hazardous combustion products'.

## SECTION 11 - TOXICOLOGICAL INFORMATION

**Toxicological data** : There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data.

| Ingredients | $LC_{50}$(4hr) inh,rat | $LD_{50}$ oral | $LD_{50}$ dermal |
|---|---|---|---|
| Limestone | N/Av | 6,450 mg/kg (rat) | N/Av |
| Portland cement | N/Av | N/Av | N/Av |
| Crystalline silica, quartz | N/Av | N/Av | N/Av |
| Titanium Dioxide | > 6.82 mg/l | > 24,000 mg/kg (rat) | > 10,000 mg/kg (rabbit) |
| Iron Oxide, $Fe_3O_4$ | N/Av | > 5,000 mg/kg (rat) | N/Av |
| Chromium Oxide | > 5.41 mg/l | > 5,000 mg/kg (rat) | N/av |
| Iron (III) Oxide, $Fe_2O_3$ | N/Av | > 5,000 mg/kg (rat) | 5,500 mg/kg (rat) |

**Carcinogenic status** : This product contains Crystalline silica - Quartz. Crystalline silica - Quartz is classified as carcinogenic by IARC (Group 1), ACGIH (Group A2), NTP (Group 1) and OSHA (OSHA Select carcinogen).

**Reproductive effects** : None known.
**Teratogenicity** : None known.
**Mutagenicity** : None known.
**Epidemiology** : Not available.
**Sensitization to material** : Portland Cement may cause an allergic skin reaction, in hypersensitive individuals possibly due to trace amounts of chromium.
**Synergistic materials** : N/Av
**Irritancy** : Moderately irritating to corrosive.
**other important hazards** : See Section 3 for additional information.

## SECTION 12 - ECOLOGICAL INFORMATION

**Environmental effects** : The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.
**Important environmental characteristics** : N/Av
**Ecotoxicological** : No data is available on the product itself.

## SECTION 13 - DISPOSAL CONSIDERATIONS

**Handling for Disposal** : Handle waste according to recommendations in Section 7.
**Methods of Disposal** : Dispose in accordance with all applicable federal, state, provincial and local regulations. Contact your local, state, provincial or federal environmental agency for specific rules.
**RCRA** : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

## SECTION 14 - TRANSPORTATION INFORMATION

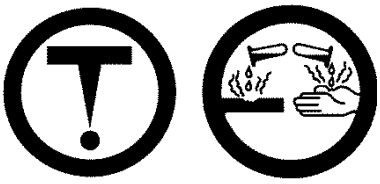
| Regulatory Information | UN Number | Shipping Name | Class | Packing Group | Label |
|---|---|---|---|---|---|
| TDG | None | Not regulated. | Not regulated | none |  |
| **TDG Additional information** | None. | | | | |
| 49CFR/DOT | None | Not regulated. | Not regulated | none |  |
| **49CFR/DOT Additional information** | None. | | | | |

## SECTION 15 - REGULATORY INFORMATION

**CanadianInformation:**

***Canadian WHMIS Classification: This product is a WHMIS Controlled Product. It meets one or more of the criteria for a controlled product provided in Part IV of the Controlled Products Regulations (CPR). Refer to Section 1 for a WHMIS Classification for this product.***

***A. General Product Information***



***D2A, E***

***This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.***

***Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).***

**B. Component Analysis – WHMIS IDL**

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

| Component | CAS No. | Minimum Concentration |
|---|---|---|
| Crystalline Silica | 14808-60-7 | 1% |
| Chromium Oxide (may contain) | 1308-38-9 | 1% |
| Iron Oxide, $Fe_2O_3$ (may contain) | 1309-37-1 | 1% |

**US Federal Information:**

TSCA: All listed ingredients appear on the Toxic Substances Control Act (TSCA) inventory.

CERCLA Reportable Quantity (RQ) (40 CFR 117.302): None reported.

SARA TITLE III: Sec. 313, Toxic Chemicals Notification, 40 CFR 372: This material is not subject to SARA notification requirements, since it does not contain any Toxic Chemical constituents above de minimus concentrations.

**USState Rightto Know Laws:**

The following components appear on one or more of the following state hazardous substances lists:

| Component | CAS No. | CA | MA | MN | NJ | PA | RI |
|---|---|---|---|---|---|---|---|
| Limestone | 1317-65-3 | No | Yes | Yes | Yes | Yes | Yes |
| Portland Cement | 65997-15-1 | No | Yes | Yes | Yes | Yes | Yes |
| Crystalline Silica | 14808-60-7 | No | Yes | Yes | Yes | Yes | Yes |
| Titanium Dioxide (may contain) | 13463-67-7 | No | Yes | Yes | Yes | Yes | Yes |
| Chromium Oxide (may contain) | 1308-38-9 | No | Yes | No | Yes | No | No |
| Iron Oxide, $Fe_2O_3$ (may contain) | 1309-37-1 | No | Yes | Yes | Yes | Yes | Yes |

California Proposition 65: This product contains chemicals known to the State of California to cause cancer and/or reproductive harm.

## SECTION 16 - OTHER INFORMATION

**Legend** **:**

ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstract Services
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR: Code of Federal Regulations
DOT: Department of Transportation
DSL: Domestic Substances List
EPA: Environmental Protection Agency
IARC: International Agency for Research on Cancer
Inh: Inhalation
mppcf: million particles per cubic foot
N/Av: Not Available
N/Ap: Not Applicable
NIOSH: National Institute of Occupational Safety and Health
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PEL: Permissible exposure limit
RCRA: Resource Conservation and Recovery Act
SARA: Superfund Amendments and Reauthorization Act
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TSCA: Toxic Substance Control Act
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

**References** : 1. ACGIH, Threshold Limit Values and Biological Exposure Indices for 2008.
2. International Agency for Research on Cancer Monographs, searched 2009.
3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases, 2009 (Chempendium and RTECs).
4. Material Safety Data Sheet from manufacturer.
5. US EPA Title III List of Lists – July 2011 version.
6. California Proposition 65 List – July 20, 2012 version.

## DISCLAIMER OF LIABILITY

The Information presented herein is supplied as a guide to those who handle or use this product and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive. The manner and conditions of use and handling may involve other and additional considerations. Safe work practices must be employed when working with any materials. It is important that the end user makes a determination regarding the adequacy of the safety procedures employed during the use of this product.

No warranty of any kind is given or implied. Ardex Engineered Cements will not be liable for any damages, losses, injuries or consequential damages which may result from the use or reliance on any information contained herein. This Material Safety Data Sheet is valid for three (3) years.

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**MSDS Preparation Date (dd/mm/yyyy)**

**:** 24/07/2012

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