SAFETY DATA SHEET

REFRASIL C2221 SERIES CLOTH AND SLIT TAPE

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name : Refrasil Textile Products 2221 Cloth and Slit Tape
Other Means of Identification : Woven Textile Cloth of a Mid to Dark Green Colour
Other Names : Irish Refrasil
Product Use: High temperature insulation – Nominal continuous filament diameter is 9-13 microns.

Distributor
Associated Gaskets Pty Ltd
68 Marigold Street
Revesby NSW 2212
Australia

Phone : 61 (0)2 9774 3333
Fax : 61 (0)2 9774 1100
Poisons Information Centre
13 11 26 from anywhere in Australia
and 0800 764 766 in New Zealand

Manufacturer
Hitco Carbon Composites, Inc
1600 W. 135th Street
Gardena, CA 90249
United States of America

Phone: 0011 1 310 527 - 0710
CHEMTREC USA 24 hour Emergency Assistance: 0011 1 800 424 - 9300

2. HAZARDS IDENTIFICATION

Classification of the Substance or Mixture
Non-hazardous according to GHS

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Characterisation : Mixture

Ingredients (Common Name)	CAS No	Concentration
Silica (amorphous silica fibers)	7631-86-9	87-94%
Chromium (III) Oxide	1308-38-9	1-3%
Polymeric Coating	Proprietary	5-10%

4. FIRST AID MEASURES

Inhalation: Remove to fresh air. Drink water to clear throat and blow nose to remove fibers. Seek medical attention if irritation persists.

Ingestion: Wash mouth with water. Drink extra water to assist natural elimination. Never give anything by mouth to an unconscious person. Seek medical attention if gastrointestinal irritation persists or if abdominal pain, nausea and vomiting occur.

Skin: In case of skin contact, immediately remove contaminated clothing and wash affected areas with water and soap. Seek medical attention if irritation persists.

Eyes: In case of eye contact, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention if irritation persists.

5. FIRE FIGHTING MEASURES

For major fires call the Fire Brigade. Ensure that an escape path is available from any fire.

Suitable Extinguishing Media : Use extinguishing media suitable for surrounding fire.

Hazardous Combustion Products : Oxides of carbon and other noxious fumes.

Special Protective Equipment and Precautions for Fire Fighters
Wear Safe Work Australia approved self-contained breathing apparatus and full protective clothing.

Unusual Fire or Explosion Hazards : There is no potential for spontaneous fire or explosion.

Hazchem Code: Not allocated.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures
Wear Safe Work Australia approved full protective clothing. Do not breathe dust.
Ensure adequate ventilation.

Environmental Precautions : Do not allow product to enter drains or water courses.

Methods and Materials for Containment and Cleaning Up
Collect mechanically. Vacuum, as appropriate, remaining dust on floor. Avoid generating dust.
If sweeping is necessary, use a dust suppressant such as water. Place into containers and dispose according to applicable local and state government regulations.

7. HANDLING AND STORAGE

Precautions for Safe Handling
Use of safe work practices are recommended to avoid eye or skin contact and inhalation of dust. Prevent generating dust. Food, beverages and tobacco products should not be stored or consumed where this material is in use. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

Conditions for Safe Storage
Store in original container in a cool, dry, and well ventilated area. Keep away from fluorine, oxygen difluoride, chlorine bifluoride and alkalis. Protect from extreme temperatures.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters
Exposure Standards (Safe Work Australia)

Fumed Silica (7631-86-9) - Respirable Dust:
TWA : - ppm / 2 mg/m³
STEL : - ppm / - mg/m³

Cristobalite (14464-46-1) - Respirable Dust:
TWA : - ppm - 0.1 mg/m³
STEL : - ppm - mg/m³

Rogue Dust:
TWA : - ppm / 10 mg/m³
STEL : - ppm / - mg/m³

Chromium (III) Compounds (as Cr):
TWA : - ppm - 0.5 mg/m³
STEL : - ppm - mg/m³

Engineering Controls
Maintain air concentration below occupational exposure standards, using engineering controls (ventilation).

Personal Protective Equipment (PPE)

Respiratory Protection
If all workplace limits are observed and good ventilation is ensured, no special precautions necessary. A respirator should be used if ventilation is unavailable, or is inadequate for keeping dust and fibre levels below the applicable exposure limits. See Australian Standards AS/NZS 1715 and 1716 for more information.

Eye/Face Protection
Safety glasses with side shields are recommended to keep dust out of the eyes.
See Australian Standards AS/NZS 1336 and 1337 for more information.

Skin Protection
Leather or cotton gloves and overall should be worn to prevent skin contact and irritation.
See Australian Standards AS/NZS 2161, 2210.1 and 2210.2 for more information.

Thermal Hazards: No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Green Textile
Odour : Almost odourless
Odour Threshold : No information available
pH : Not applicable
Evaporation Rate : Not applicable
Vapour Pressure : Not applicable
Vapour Density : Not applicable
Solubility in Water : Insoluble
Solubility in Ethanol : No information available
Relative Density (Specific Gravity) : 2.1
Melting Point / Freezing Point : <1593°C
Initial Boiling Point / Range : Not applicable
Auto-ignition Temperature : Not applicable
Decomposition Temperature : No information available
Partition coefficient: n-octanol/water : No information available
Lower Flammability or Explosive Limit : Not applicable
Upper Flammability or Explosive Limit : Not applicable

10. STABILITY AND REACTIVITY

Chemical Stability : Stable at ambient temperature and under normal conditions of use.

Conditions to Avoid : Extreme temperatures.

Incompatible Materials : Fluorine, Oxygen Difluoride, Chlorine Bifluoride and Alkalis.

Possibility of Hazardous Reactions : No hazardous reactions known.

Hazardous Decomposition Products
Oxides of carbon and other noxious fumes. If this material is used at temperatures exceeding 982°C it may undergo partial conversion to cristobalite, a form of crystalline silica, which if inhaled in sufficient quantity may cause severe respiratory disease (pneumoconiosis).

11. TOXICOLOGICAL INFORMATION

Toxicity

Silica: Oral LD50 (rat) > 5000 mg/kg
Dermal LD_{50} (rabbit) > 2000 mg/kg

Acute Health Effects

Skin Corrosion/Irritation
Dust particles from handling or abrasion may cause mechanical irritation of the skin.

Serious Eye Damage/Irritation
Dust particles from handling or abrasion may cause mechanical irritation of the eye.

Respiratory or Skin Sensitisation
No sensitizing effects known.

Germ Cell Mutagenicity
No information available.

Carcinogenicity
Silica, amorphous is classified by IARC as a Group 3 - Not classifiable as to its carcinogenicity to humans.
Silica dust, crystalline, in the form of quartz or cristobalite is classified by IARC as a Group 1 - Carcinogenic to humans.
Chromium (III) oxide is classified by IARC as a Group 3 - Not classifiable as to its carcinogenicity to humans.

Reproductive Toxicity
No information available.

Continuation of Section 11. TOXICOLOGICAL INFORMATION

Specific Target Organ Toxicity (STOT) - Single Exposure
No information available.

Specific Target Organ Toxicity (STOT) -Repeated Exposure
No information available.

Aspiration Hazard
No information available.

Routes of Exposure

Inhalation : Dust particles from the product may be irritating to the upper respiratory tract and cause coughing, nasal congestion and sore throat.

Ingestion : Not an expected route of exposure. May cause gastrointestinal irritation if swallowed.

Eye : Dust particles from handling or abrasion may cause mechanical irritation of the eye.

Skin : Dust particles from handling or abrasion may cause mechanical irritation of the skin.

Chronic Health Effects
Prolonged exposure to respirable crystalline silica can cause silicosis. If this material is used at temperatures exceeding 982°C it may undergo partial conversion to cristobalite, a form of crystalline silica, which if inhaled in sufficient quantity may cause severe respiratory disease (pneumoconiosis).

Existing Conditions Aggravated by Exposure
Pre-existing chronic respiratory, skin, or eye diseases or conditions.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Aquatic Organisms:

LC_{50} (Brachydanio rerio) = 5000 mg/L – 96 hr (static)
EC_{50} (Selenastrum capricornutum) = 440 mg/L – 72 hr
EC_{50} (Ceriodaphmia dubia) = 7600 mg/L – 48 hr

Persistence and Degradability **:** No information available.
Bio Accumulative Potential **:** No information available.
Mobility in Soil **:** No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Methods and Containers
Dispose according to applicable local and state government regulations.

Special precautions for landfill or incineration
Please consult your state Land Waste Management Authority for more information.

14. TRANSPORT INFORMATION

Not classified as a dangerous good according to the Australian Code for the Transport of Dangerous goods by road or rail (ADG 7).

UN Number **:** Not applicable
Proper Shipping Name : Not applicable
Dangerous Goods Class **:** Not applicable
Subsidiary Risk : Not applicable
Hazchem Code : Not applicable
Packing Group : Not applicable
Special Provisions : Not applicable

Continuation of Section 14. TRANSPORT INFORMATION

Limited Quantities	:	Not applicable
Packagings & IBCs - Packing Instruction	:	Not applicable
Packagings & IBCs - Special Packing Provisions	:	Not applicable
Portable Tanks & Bulk Containers – Instructions	:	Not applicable
Portable Tanks & Bulk Containers – Spec Provisions	:	Not applicable

SEA TRANSPORT – IMDG

UN Number	**:**	Not applicable
Proper Shipping Name	:	Not applicable
Dangerous Goods Class	:	Not applicable
Packing Group	:	Not applicable
EMS Number	:	Not applicable

AIR TRANSPORT – ICAO / IATA

UN Number	:	Not applicable
Proper Shipping Name	**:**	Not applicable
Dangerous Goods Class	**:**	Not applicable
Packing Group	:	Not applicable

15. REGULATORY INFORMATION

Silica and Chromium (III) Oxide are listed in the Australian Inventory of Chemical Substances (AICS).

16. OTHER INFORMATION

Last Revision of MSDS Rev 1.0 (19/04/2012)
Prepared by MSDS.COM.AU Pty Ltd
Abbreviations Used

CAS	:	Chemical Abstracts Service (USA)
GHS	:	Globally Harmonised System of Classification and Labelling of Chemicals
IARC	:	International Agency for Research on Cancer
STEL	:	Short Term Exposure Limit
TWA	:	Time Weighted Average

Emergency Contacts

Associated Gaskets Pty Ltd	:	61 (0)2 9774 3333
Police and Fire Brigade	:	000
Poisons Information Centre	:	13 11 26 from anywhere in Australia, (0800 764 766 in New Zealand)

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This MSDS is prepared in accord with the Safe Work Australia document “Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals.”