MATERIAL SAFETY DATA SHEET

1. Identification of Material and Supplier

Product Name	**Thor Helical D.U Grout Part A (Powder)**
Other Names	n.all.
Recommended Use	For use with Thor Helical D.U.Grout liquid

Supplier Name	**Thor Helical Pty Ltd Australia**		
Address	**2 Mayfair Court, Chimside Park, Victoria, 3116**		
Web Address	**www.thorhelical.com.au**		
Telephone	**61 3 9727 5468**	**Facsimile**	**61 3 9726 4976**
Technical Support	**61 3 9727 5468**	Emergency	**61 3 9727 5468**

2. Hazards Identification

Hazard Classification **This product is hazardous according to the criteria of the ASCC. All components are listed on the AICS.** Not a DG Substance according to the ADG Code. Not a scheduled poison according to the SUSDP. Cement contains varying proportions of crystalline silica a Category 1 carcinogen according to the IARC.

Risk Phrases R 36 Irritating to the eyes, R 37 Irritating to the respiratory system, R 38 Irritating to the skin, R 49 May cause cancer by inhalation, R 66 Repeated exposures may cause skin dryness and cracking.

Safety Phrases S 22 Do not breathe dusts, S 24/25 Avoid contact with the skin and eyes, S 26 In case of contact with the eyes, rinse immediately with plenty of water and seek medical advice, S 28 After contact with the skin, wash immediately with plenty of soap-suds, S 38 , In case of insufficient ventilation, wear suitable respiratory equipment. S 36/37/39 Wear suitable protective clothing, glove and eye/face protection.

3. Composition/Information on Ingredients

Chemical Identity	Proportion	CAS No
Portland Cement	30 - 60 %	65997-15-1
Crystalline Silica	30 - 60 %	14808-60-7
Ingredients determined to be non-hazardous or below cut-off values	To 100 %	n.a.

4. First Aid Measures

4.1 Symptoms of Exposure by Route

SWALLOWED

Small amounts ingested incidental to normal handling will have little or no effect. Larger amounts ingested may cause stomach pains and discomfort. Even small amounts may cause superficial burns to lips and mouth.

EYE

Will cause moderate to severe irritation to the eye with possible burns and must be promptly removed to prevent further damage.

SKIN

May cause superficial burns to damp skin, especially if trapped against skin by clothing. Prolonged or repeated skin exposures may cause drying and cracking of the skin and possibly lead to dermatitis.

INHALED

Will cause coughing and a dry throat. Over several years prolonged or repeated exposure to high dust concentrations may lead to lung disorders. In severe cases these may include cancer.

4.2 First Aid Instructions

SWALLOWED

Do not induce vomiting. Rinse mouth clear with water and give two 300 ml glasses of water to drink. If patient involuntarily vomits encourage to lean forward to avoid aspirating into lungs. If symptoms persist seek prompt medical help.

EYE

Immediately: Hold eye open and flush with clean water for at least 15 minutes. While flushing, gently pull upper and lower eyelids away from eyes and ensure carefully flushed. If symptoms persist seek prompt medical attention. If burns are present seek urgent medical assistance.

SKIN

Remove contaminated clothing and footwear (while under safety shower if appropriate). Flush affected area with water for 3-5 minutes followed by washing gently with soap and water for a further 5 minutes. Rinse well and pat dry. If symptoms persist seek prompt medical assistance.

INHALED

Remove patient (while wearing SCBA if concentrations are high) to fresh air. Allow to rest. Rinse mouth and nose with water. Provide artificial respiration if breathing stops. Seek urgent medical attention unless recovery is virtually immediate.

FIRST AID FACILITIES

Provide normal industrial first aid facilities including eye-wash stations and safety showers as appropriate.

Notes to Physician (for symptoms of over-exposure to this product see above)

Possible symptoms of Chronic Health Effects

Prolonged or repeated inhalation of fine dusts may lead to congestive diseases of the lung or in extreme cases (after years of exposure) to lung cancer. Prolonged or repeated exposure may lead to skin drying and cracking.

Possible aggravated pre-existing conditions

None reported.

Suggested treatment for acute symptoms, known antidotes

Provide supportive care and treatment based on the patient's reaction to the exposure. For further information contact the :

POISONS INFORMATION CENTRE 13 11 26 in all States (New Zealand Dial 0800 764 766)

5. Fire Fighting Measures

5.1 Flammability and Explosion Hazards

Product is non-combustible. No explosive effect expected.

5.2 Hazardous Combustion Products

None known to manufacturer.

5.3 Suitable Extinguishing Media

Select to suit surrounding fires, or use dry agents or water delivered as fog.

Hazchem Code: n.a.

5.4 Precautions for Fire Fighters and Special Equipment

Wear SCBA and full turn out clothing. Avoid bodily contact with substance or run-off.

6. Accidental Release Measures

6.1 Emergency Procedures – Spills and Leaks **(See Section 13 for disposal considerations)**

Prevent product entering drains or waterways. Wear dust mask or respirator. Without creating dust clouds sweep or shovel up and place in plastic drums or pails, fit lids, label and place in a safe area to await disposal or recovery. Thoroughly ventilate area before continuing normal work.

7. Handling and Storage

7.1 Handling Advice

Wear suitable protective clothing. Do not breathe dusts.

7.2 Storage Advice

Store in a cool, dry and well-ventilated area. Avoid generating or accumulating dusts during handling.

8. Exposure Controls/ Personal Protection

8.1 Exposure Standards

ASCC has not established an exposure standard for this product. The standard for some of the ingredients has been set: :

Substance	*TWA*	*STEL*
Crystalline Silica (Category 1 Carcinogen)	0.1 mg/m³	n.est.
Portland Cement	10 mg/m³	n.est.

8.2 Engineering Control Methods

In outdoor use natural ventilation is usually adequate. If extremely dusty conditions prevail or if working in poorly ventilated enclosed areas provide adequate ventilation/dust extraction and exhausts to ensure that the work area is kept below the TWA set.

8.3 Personal Protective Equipment

Respiratory Protection

Use good quality dust mask in normal use or respirator with particulate filters to AS 1715 & 1716 in very dusty circumstances when mixing

Eye Protection

Wear safety glasses or goggles to AS 1337.

Gloves

Use PVC or leather gloves to AS 2161.2

Clothing

Wear Tyvec or cotton coveralls fastened at the neck and wrists. Supplement with PVA apron if needed.

9. Physical and Chemical Properties

Appearance:	Grey powder	**Odour:**	cement-like
Freezing/ Melting Point:	n.d.	**Boiling Point:**	n.d.
Density:	approximately 1.3	**Vapour Pressure:**	n.d.
Solubility in water :	Insoluble (Miscible)	**Volatiles:**	n.d.
Flash Point:	n.a.	**Flammability Limits:**	n.a.
Auto Ignition Point:	n.a.	**AS 1940 Classification:**	n.a.
Other Properties	Cement may contain varying proportions of crystalline silica, a Category 1 human carcinogen. Product is non-combustible. Contact with water may cause unintended curing of the product before use.		

10. Stability and Reactivity

During all normal circumstances of use or handling the product is completely stable. Avoid unintended contact with moisture.

11. Toxicological Information

Crystalline Silica as quartz: Inhalation (human) LCLo: 0.3 mg/m³/10Y Inhalation (human) TCLo: 16 mppcf*/8H/17.9Y Inhalation (rat) TCLo: 50 mg/m³/6H/71W Intermittent; focal fibrosis, (pneumoconiosis), cough, dyspnoea. Intermittent; liver - tumours.

12. Ecological Considerations

Will block drains or small waterways as product cures in contact with water. Not biodegradable.

13. Disposal Considerations

Disposal must be in accordance with local regulations for hazardous wastes. If dampened and allowed to cure may be disposed of as non-hazardous waste.

14. Transport Information

Requirements under the ADG Code, the IMDG Code or the IATA DG Regulations do not apply to this product.

15. Regulatory Information

Label in accordance with the "National Code of Practice for the Labelling of Workplace Substance" [ASCC: 2012 (1994)] with the Risk and Safety Phrases given on page 1 of this MSDS and the word "Hazardous". Labelling under the SUSDP or the ADG Code is not required.

16. Other Information

Date of Issue: 10/10/2007 New MSDS (Version 1.0) to comply with National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition NOHSC: 2011 (2003).

Data Sources used: in the preparation of this MSDS include: "*Chempendium*" and *"MSDS plus Cheminfo"* published in CD format by CCOHS Canada 2005 - 4."*TOMES*" a CD database published by Micromedex, USA, "*Hazardous Properties of Industrial Materials*" Van Nostrand Rheinhold NY, USA . "*List of Designated Hazardous Substances"* NOHSC 10005:1999, *"National Exposure Standards"* NOHSC 1003:1995 . **Abbreviations used:** n.d = not determined, n.a = not applicable, n.all =not allocated, SUSDP=Standard for the Uniform Scheduling of Drugs and Poisons, ADG=Australian Dangerous Goods Code, IATA =International Air Transport Association, (Dangerous Goods Regulations), IMDG=International Maritime Dangerous Goods (Code), ASCC=Australian Safety and Compensation Council. IARC=International Agency(for) Research (of) Cancer.

Disclaimer

No representative of Thor Helical Australia Pty Ltd or any other person has authority to add to, or alter in any way, any MSDS or the information supplied thereon. Any alterations render this MSDS invalid. The information contained herein is believed by Thor Helical Australia Pty Ltd and SSC Pty Ltd to be accurate at the issue date shown and in accordance with information available to us. Persons dealing with the products referred to in this MSDS do so at their own risk since their actions are beyond our control. Thor Helical Australia Pty Ltd and SSC Pty Ltd accepts no liability whatsoever for damage or injury arising from the use of the information contained in this document

MATERIAL SAFETY DATA SHEET

1. Identification of Material and Supplier

Product Name	**Thor Helical D.U. Grout Part B (Liquid)**
Other Names	n.all.
Recommended Use	Mix with Thor Helical D.U. Grout Part A (Powder) to produce a strongly adhering grout.

Supplier Name	**Thor Helical Pty Ltd Australia**
Address	**2 Mayfair Court, Chimside Park, Victoria, 3116**
Web Address	**www.thorhelical.com.au**
Telephone	**61 3 9727 5468**
Facsimile	**61 3 9726 4976**
Technical Support	**61 3 9727 5468**
Emergency	**61 3 9727 5468**

2. Hazards Identification

Hazard Classification **This product is non-hazardous according to the criteria of the ASCC. All components are listed on the AICS.** Not a DG substance according to the ADG Code. Not a scheduled poison according to the SUSDP. Not a flammable or combustible liquid according to AS 1940

Risk Phrases None allocated (see also page 2)

Safety Phrases None allocated (see also page 3)

3. Composition/Information on Ingredients

Chemical Identity	Proportion	CAS No
Aqueous solution: All ingredients have been determined to be non-hazardous or below cut off values	100 %	n.a.

4. First Aid Measures

4.1 Symptoms of Exposure by Route

SWALLOWED

Minor amounts ingested incidental to normal handling will have little or no effect. Larger amounts deliberately ingested will cause nausea, vomiting and stomach discomfort.

EYE

Will cause moderate eye irritation and must be promptly removed by flushing.

SKIN

May cause minor irritation. Should be promptly removed by washing with soap and water.

INHALED

Vapour may cause slight to moderate irritation to upper respiratory tract.

4.2 First Aid Instructions

SWALLOWED

Do not induce vomiting. Rinse mouth clear with water and give two 300 ml glasses of water to drink. If patient involuntarily vomits encourage to lean forward to avoid aspirating. If symptoms persist seek prompt medical help.

EYE

Immediately: Hold eye open and flush with clean water for at least 15 minutes. While flushing, gently pull upper and lower eyelids away from eyes and ensure carefully flushed. If symptoms persist seek prompt medical attention.

SKIN

Remove contaminated clothing and footwear (while under safety shower if appropriate). Flush affected area with water for 3-5 minutes followed by washing gently with soap and water for a further 5 minutes. Rinse well and pat dry. If symptoms persist seek prompt medical attention.

INHALED

Remove patient (while wearing SCBA if concentrations are high) to fresh air. Allow to rest. Rinse mouth and nose with water. Provide artificial respiration if breathing stops. Seek urgent medical attention unless recovery is virtually immediate.

FIRST AID FACILITIES

Provide normal industrial first aid facilities including eye-wash stations and safety showers as appropriate.

Notes to Physician (for symptoms of over-exposure to this product see above)

Possible symptoms of Chronic Health Effects

Prolonged or repeated skin exposure may cause drying and cracking of the skin.

Possible aggravated pre-existing conditions

Suggested treatment for acute symptoms, known antidotes

Provide supportive care and treatment based on the patient's reaction to the exposure. For further information contact the :

POISONS INFORMATION CENTRE 13 11 26 in all States (New Zealand Dial 0800 764 766)

5. Fire Fighting Measures

5.1 Flammability and Explosion Hazards

Containers may rupture in fire conditions due to steam pressure. Product is non-flammable as sold but residues may burn when water content has boiled off.

5.2 Hazardous Combustion Products

CO_x and NO_x

5.3 Suitable Extinguishing Media

Use water as fine spray or fog, foam or dry chemical may also be used.

Hazchem Code: n.a.

5.4 Precautions for Fire Fighters and Special Equipment

Wear SCBA and full turn out clothing. Avoid bodily contact with substance or run-off. Contain run-off for later collection and controlled disposal.

6. Accidental Release Measures

6.1 Emergency Procedures – Spills and Leaks **(See Section 13 for disposal considerations)**

Prevent material entering drains or waterways. Send unnecessary personnel out of area. Wear full protective clothing including rubber boots and respirator. Spread sand, soil or other inert absorbent over the pool. When saturated collect into metal or plastic drums or pails. Fit lids, label and place containers in a safe area to await disposal.

7. Handling and Storage

7.1 Handling Advice

7.2 Storage Advice

Store in a cool, dry and well-ventilated area. Keep containers closed when not in use.

8. Exposure Controls/ Personal Protection

8.1 Exposure Standards

No exposure standards have been set by ASCC for this product or its ingredients in the proportions present in the product. A residual trace amount of styrene butadiene monomer may be present

Substance	*TWA*	*STEL*
	10 ppm	100 ppm

8.2 Engineering Control Methods

If used out doors natural ventilation is normally adequate. If used in enclosed spaces with poor ventilation provide mechanical ventilation to comfort levels.

8.3 Personal Protective Equipment

Respiratory Protection

Not usually required. If vapour concentration is uncomfortably high, or if applying with spray gun, use respirator fitted with an organic vapour filter to AS 1715 & 1716. Use SCBA in confined spaces.

Eye Protection

Not normally required. If mists or splashes are likely wear safety goggles or full face shield to AS 1337.

Gloves

When mixing and applying wear rubber, PVA or neoprene gloves to AS 2161.

Clothing

Wear cotton or Tyvec coveralls fastened at the neck and wrist. Supplement with a rubber or PVA apron if required.

9. Physical and Chemical Properties

Appearance:	White, milky liquid	**Odour:**	slight characteristic
Freezing/ Melting Point:	n.d.	**Boiling Point:**	Initial 100 ºC
Density:	1.0	**Vapour Pressure:**	n.d.
Solubility in water :	insoluble	**Volatiles:**	n.d.
Flash Point:	n.a.	**Flammability Limits:**	n.a.
Auto Ignition Point:		**AS 1940 Classification:**	
Other Properties	An aqueous solution containing less than 1% acticides		

10. Stability and Reactivity

In normal conditions of handling and use the product is stable.

11. Toxicological Information

No relevant data found. Estimated toxicity ingestion > 3000 mg

12. Ecological Considerations

May have an adverse effect of aquatic organisms. Slowly biodegrades.

13. Disposal Considerations

Must be disposed of in accordance with local regulations for industrial non-hazardous wastes.

14. Transport Information

The provision of the ADG Code, the IMDG Code or the IMDG Regulations do not apply to this product.

15. Regulatory Information

No special labelling requirements under the Code of Practice for the labelling of Workplace Substances(ASCC:2012[1994]), the ADG Code or the SUSDP apply to this product.

16. Other Information

Date of Issue: 10/10/2007 New MSDS (Version 1.0) to comply with National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition NOHSC: 2011 (2003).

Data Sources used: in the preparation of this MSDS include: "*Chempendium*" and *"MSDS plus Cheminfo"* published in CD format by CCOHS Canada 2005 - 4."*TOMES*" a CD database published by Micromedex, USA, "*Hazardous Properties of Industrial Materials*" Van Nostrand Rheinhold NY, USA . "*List of Designated Hazardous Substances"* NOHSC 10005:1999, *"National Exposure Standards"* NOHSC 1003:1995 . **Abbreviations used:** n.d = not determined, n.a = not applicable, n.all =not allocated, SUSDP=Standard for the Uniform Scheduling of Drugs and Poisons, ADG=Australian Dangerous Goods Code, IATA =International Air Transport Association, (Dangerous Goods Regulations), IMDG=International Maritime Dangerous Goods (Code), ASCC=Australian Safety and Compensation Council. IARC=International Agency(for) Research (of) Cancer.

Disclaimer

No representative of Thor Helical Australia Pty Ltd or any other person has authority to add to, or alter in any way, any MSDS or the information supplied thereon. Any alterations render this MSDS invalid. The information contained herein is believed by Thor Helical Australia Pty Ltd and SSC Pty Ltd to be accurate at the issue date shown and in accordance with information available to us. Persons dealing with the products referred to in this MSDS do so at their own risk since their actions are beyond our control. Thor Helical Australia Pty Ltd and SSC Pty Ltd accepts no liability whatsoever for damage or injury arising from the use of the information contained in this document