


## Hazardous Chemical, NON - Dangerous Goods

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	TPA Screed
Product Code(s)	101-060
Synonyms	None
Relevant identified uses of the substance or mixture and uses advised against	
Recommended Use	Cement Based Screed
Supplier	Tiling Products Australia
Address	PO Box 33 Archerfield BC, Queensland 4108
Telephone	+61 (7) 3722 3822
Email	info@tpa-us.com.au
Emergency Contact	Australian Poisons Information Centre 13 11 26

### 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture	HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.
Poisons Schedule	Not Applicable
Classification [1]	Skin Corrosion/Irritation - Category 2 Serious Eye Damage/Irritation - Category 1 Skin Sensitization - Category 1 Germ Cell Mutagenicity - Category 2 Specific Target Organ Toxicity (Single Exposure) - Category 3 Respiratory Tract Irritation Specific Target Organ Toxicity (Repeated Exposure) - Category 2
Single word	DANGER 
HAZARD STATEMENTS	
H315	Causes skin irritation.
H317	May Cause an allergic skin reaction.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H341	Suspected of causing genetic defects.
H373	May cause damage to organs through prolonged or repeated exposure.
Supplementary statement(s)	Not Applicable

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PRECAUTIONARY STATEMENTS - PREVENTION	
P201	Obtain special instructions before use.
P260	Do not breathe dust/fume.
P264	Wash all exposed external body areas thoroughly after handling.
P280	Wear protective clothing, gloves, eye/face protection and a suitable respirator.
P272	Contaminated work clothing should not be allowed out of the workplace.
P281	Use personal protective equipment as required.
PRECAUTIONARY STATEMENTS - RESPONSE	
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	If exposed or concerned: Get medical advice/attention.
P310	Immediately call a POISON CENTER or doctor/physician.
P362	Take off contaminated clothing and wash before reuse.
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P304+340	IF INHALED: Remove the victim to fresh air and keep at rest in a position comfortable for breathing.
PRECAUTIONARY STATEMENTS - STORAGE	
P405	Store locked up.
PRECAUTIONARY STATEMENTS - DISPOSAL	
P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

### 3. COMPOSITION INFORMATION

SUBSTANCES		
See section below for composition of mixtures.		
Chemical Name	CAS Number	Proportion %
Graded sand	14808-60-7	75-85
Portland cement	65997-15-1	15-25
Ingredients determined to be non-hazard	-	To 100

### 4. FIRST AID MEASURES

If poisoning occurs, contact a doctor or Poisons Information Centre (Phone 131 126).

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<b>Inhalation</b>	<p>If fumes or combustion products are inhaled remove from contaminated area. Lay patient down. Keep warm and rested. Prostheses such as false teeth, which may block airways, should be removed, where possible, prior to initiating first aid procedures. Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. Transport to hospital, or doctor, without delay.</p>
<b>Ingestion</b>	<p><b>If swallowed DO NOT induce vomiting.</b> If vomiting occurs, lean the patient forward or place on left side (head- down position if possible) to maintain open airway and prevent aspiration. Observe the patient carefully. Never give liquid to a person showing signs of being sleepy or with reduced awareness, i.e. becoming unconscious. Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. Seek medical advice.</p>
<b>Skin Contact</b>	<p>If skin contact occurs: Immediately remove all contaminated clothing, including footwear. Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation.</p>
<b>Eye Contact</b>	<p>If this product makes in contact with the eyes: Immediately hold eyelids apart and flush the eye continuously with running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. Transport to hospital or doctor without delay. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</p>

### Indication of any immediate medical attention and special treatment needed.

- Treat symptomatically.

### For acute or short-term repeated exposures to iron and its derivatives:

- Always treat symptoms rather than history.  
In general, however, toxic doses exceed 20 mg/kg of ingested material (as elemental iron) with lethal doses exceeding 180 mg/kg.
- Control of iron stores depends on variation in absorption rather than excretion. Absorption occurs through aspiration, ingestion and burned skin.
- Hepatic damage may progress to failure with hypoprothrombinaemia and hypoglycaemia. Hepatorenal syndrome may occur.
- Iron intoxication may also result in decreased cardiac output and increased cardiac pooling which subsequently produces hypotension.
- Serum iron should be analyzed in symptomatic patients. Serum iron levels (2-4 hrs post-ingestion) greater than 100 ug/dL indicate poisoning with levels more than 350 ug/dL, being potentially serious. Emesis or lavage (for obtunded patients with no gag reflex) are the usual means of decontamination.

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- Activated charcoal does not effectively bind iron.
- Catharsis (using sodium sulfate or magnesium sulfate) may only be used if the patient already has diarrhoea.
- Deferoxamine is a specific chelator of ferric (3+) iron and is currently the antidote of choice. It should be administered parenterally. [Ellenhorn and Barceloux: Medical Toxicology]

### For acute or short-term repeated exposures to dichromates and chromates:

- Absorption occurs from the alimentary tract and lungs.
- The kidney excretes about 60% of absorbed chromate within 8 hours of ingestion. Urinary excretion may take up to 14 days.
- Establish airway, breathing and circulation. Assist ventilation.
- Induce emesis with Ipecac Syrup if patient is not convulsing, in coma or obtunded and if the gag reflex is present. Otherwise use gastric lavage with endotracheal intubation.
- Fluid balance is critical. Peritoneal dialysis, haemodialysis or exchange transfusion may be effective although available data is limited.
- British Anti-Lewisite, ascorbic acid, folic acid and EDTA are probably not effective. There are no antidotes.
- Primary irritation, including chrome ulceration, may be treated with ointments comprising calcium-sodium-EDTA. This, together with the use of frequently renewed dressings, will ensure rapid healing of any ulcer which may develop.
- The mechanism of action involves the reduction of Cr (VI) to Cr (III) and subsequent chelation; the irritant effect of Cr (III)/ protein complexes is thus avoided. [ILO Encyclopedia]

[Ellenhorn and Barceloux: Medical Toxicology]

### 5. FIRE FIGHTING MEASURES

<b>Extinguishing media</b>	
<ul style="list-style-type: none"><li>• There is no restriction on the type of extinguisher which may be used.</li><li>• Use extinguishing media suitable for surrounding area.</li></ul>	
<b>Special hazards arising from the substrate or mixture.</b>	
<b>Fire Incompatibility</b>	None known.
<b>Advice for firefighters</b>	
<b>Fire Fighting</b>	Alert the Fire Brigade and tell them the location and nature of the hazard. Wear breathing apparatus plus protective gloves in the event of a fire. Prevent, by any means available, spillage from entering drains or water courses. Use firefighting procedures suitable for surrounding area. DO NOT approach containers suspected to be hot. Cool fire exposed containers with water spray from a protected location. If safe to do so, remove containers from path of fire. Equipment should be thoroughly decontaminated after use.

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<b>Fire/Explosion Hazard</b>	<p>Under certain conditions the material may become combustible because of the ease of ignition which occurs after the material reaches a high specific area ratio (thin sections, fine particles, or molten states). However, the same material in massive solid form is comparatively difficult to ignite. Nearly all metals will burn in air under certain conditions. Some are oxidised rapidly in the presence of air or moisture, generating sufficient heat to reach their ignition temperatures. Others oxidise so slowly that heat generated during oxidation is dissipated before the metal becomes hot enough to ignite.</p> <p>Particle size, shape, quantity, and alloy are important factors to be considered when evaluating metal combustibility. Combustibility of metallic alloys may differ and vary widely from the combustibility characteristics of the alloys' constituent elements.</p> <p>Decomposition may produce toxic fumes of: silicon dioxide (SiO<sub>2</sub>) metal oxides</p> <p>When aluminum oxide dust is dispersed in air, firefighters should wear protection against inhalation of dust particles, which can also contain hazardous substances from the fire absorbed on the alumina particles.</p> <p>May emit poisonous fumes. May emit corrosive fumes.</p>
<b>Hazchem</b>	Not Applicable.

### 6. ACCIDENTAL RELEASE MEASURES

<b>Personal precautions, protective equipment, and emergency procedures</b>	
See section 8.	
<b>Environmental precautions</b>	
See section 12.	
<b>Methods and material for containment and cleaning up</b>	
<b>Minor Spills</b>	<p>Clean up waste regularly and abnormal spills immediately.</p> <p>Avoid breathing dust and contact with skin and eyes.</p> <p>Wear protective clothing, gloves, safety glasses and dust respirator.</p> <p>Use dry clean up procedures and avoid generating dust.</p> <p>Vacuum up or sweep up. NOTE: Vacuum cleaner must be fitted with an exhaust micro filter (HEPA type) (consider explosion-proof machines designed to be grounded during storage and use).</p> <p>Dampen with water to prevent dusting before sweeping.</p> <p>Place in suitable containers for disposal.</p>

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<b>Major Spills</b>	<p>Clear area of personnel and move upwind. Alert Fire Brigade and tell them the location and nature of hazard. Wear full body protective clothing with breathing apparatus. Prevent, by all means available, spillage from entering drains or water courses. Consider evacuation (or protect in place). No smoking, naked lights, or ignition sources. Increase ventilation. Stop leak if safe to do so. Water spray or fog may be used to disperse / absorb vapour. Contain or absorb spill with sand, earth, or vermiculite. Collect recoverable product into labelled containers for recycling. Collect solid residues and seal in labelled drums for disposal. Wash area and prevent runoff into drains. After clean-up operations, decontaminate and launder all protective clothing and equipment before storing and re-using. If contamination of drains or waterways occurs, advise emergency services.</p>
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### 7. HANDLING AND STORAGE

<b>Precautions for safe handling.</b>	
<b>Safe Handling</b>	<p>Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Prevent concentration in hollows and sumps. <b>DO NOT enter confined spaces until atmosphere has been checked.</b> <b>DO NOT allow material to contact humans, exposed food, or food utensils.</b> Avoid contact with incompatible materials. <b>When handling, DO NOT eat, drink, or smoke.</b> Keep containers securely sealed when not in use. Avoid physical damage to containers. Always wash hands with soap and water after handling. Work clothes should be washed separately. Wash contaminated clothing before re-use. Use good occupational work practice. Observe manufacturer's storage and handling recommendations contained within this SDS. Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.</p>

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<b>Other Information</b>	<p>Store in original containers. Keep containers securely sealed. Store in a cool, dry area protected from environmental extremes. Store away from incompatible materials and foodstuff containers. Protect containers against physical damage and check regularly for leaks. Observe manufacturer's storage and handling recommendations contained within this SDS. For major quantities: Consider storage in bunded areas - ensure storage areas are isolated from sources of community water (including stormwater, ground water, lakes, and streams). Ensure that accidental discharge to air or water is the subject of a contingency disaster management plan; this may require consultation with local authorities.</p>
<b>Conditions for safe storage, including any incompatibilities:</b>	
<b>Suitable Container</b>	<p>Multi-ply paper bag with sealed plastic liner or heavy gauge plastic bag. <b>NOTE:</b> Bags should be stacked, blocked, interlocked, and limited in height so that they are stable and secure against sliding or collapse. Check that all containers are clearly labelled and free from leaks. Packing as recommended by manufacturer.</p>
<b>Storage Incompatibility</b>	<p>Derivative of electropositive metal. WARNING: Avoid or control reaction with peroxides. All transition metal peroxides should be considered as potentially explosive. For example, transition metal complexes of alkyl hydroperoxides may decompose explosively. The pi-complexes formed between chromium (0), vanadium (0) and other transition metals (haloarene-metal complexes) and mono-or poly-fluorobenzene show extreme sensitivity to heat and are explosive. Avoid reaction with borohydrides or cyanoborohydrides. Metals and their oxides or salts may react violently with chlorine trifluoride and bromine trifluoride. These trifluorides are hypergolic oxidisers. They ignite on contact (without external source of heat or ignition) with recognised fuels – contact with these materials, following an ambient or slightly elevated temperature, is often violent and may produce ignition. The state of subdivision may affect the results. Avoid strong acids, acid chlorides, acid anhydrides and chloroformates. Avoid contact with copper, aluminium, and their alloys. Silicas: react with hydrofluoric acid to produce silicon tetrafluoride gas. react with xenon hexafluoride to produce explosive xenon trioxide. reacts exothermically with oxygen difluoride, and explosively with chlorine trifluoride (these halogenated materials are not commonplace industrial materials) and other fluorine-containing compounds. may react with fluorine, chlorates. are incompatible with strong oxidisers, manganese trioxide, chlorine trioxide, strong alkalis, metal oxides, concentrated orthophosphoric acid, vinyl acetate. may react vigorously when heated with alkali carbonates.</p>

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### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

#### CONTROL PARAMETERS.

Occupational Exposure Limits (OEL)

#### Ingredient Data

Source	Ingredients	Material Name	TWA	STEL	Peak	Notes
Australian Exposure Standards	Graded sand	Silica-Crystalline: Quartz (respirable dust)	0.05 mg/m <sup>3</sup>	Not Available	Not Available	Not Available
Australian Exposure Standards	Portland cement	Portland cement	10 mg/m <sup>3</sup>	Not Available	Not Available	(a) This value is for inhalable dust containing no asbestos and < 1% crystalline silica.

#### EMERGENCY LIMITS

Ingredients	Teel-1	Teel-2	Teel-3
Graded sand	0.075 mg/m <sup>3</sup>	33 mg/m <sup>3</sup>	200 mg/m <sup>3</sup>


Ingredients	Original IDLH	Revised IDLH
Graded sand	25 mg/m <sup>3</sup> / 50 mg/m <sup>3</sup>	Not Available
Portland cement	5,000 mg/m <sup>2</sup>	Not Available

#### Exposure controls

<b>Appropriate engineering controls</b>	<p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.</p> <p>The basic types of engineering controls are:</p> <ul style="list-style-type: none"><li>Process controls which involve changing the way a job activity or process is done to reduce the risk.</li><li>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.</li><li>Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.</li></ul> <p>Employers may need to use multiple types of controls to prevent employee overexposure. General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in specific circumstances. If the risk of overexposure exists, wear an approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.</p>
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<b>Appropriate engineering controls</b>	Type of Contaminants:	Air Speed:
	solvent, vapours, degreasing etc., evaporating from tank (in still air).	0.25-0.5 m/s (50-100 f/min.)
	aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)
	grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.5-10 m/s (500-2000 f/min.)
	Within each range the appropriate value depends on:	
	Lower end of the range	Upper end of the range
	1: Room air currents minimal or favourable to capture	1: Disturbing room air currents
	2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity
	3: Intermittent, low production.	3: High production, heavy use
	4: Large hood or large air mass in motion	4: Small hood-local control only
<p>Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square distance from the extraction point (in simple cases). Therefore, the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.</p>		
<b>Personal protection</b>		
<b>Eye and face protection</b>	<p>Safety glasses with side shields. Chemical goggles. Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed their hands thoroughly. (CDC NIOSH Current Intelligence Bulletin 59), (AS/NZS 1336 or national equivalent)</p>	
<b>Skin protection</b>	See hand protection below	

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### Hands/feet protection

**NOTE:**

The material may produce skin sensitization in predisposed individuals. Care must be taken, when removing gloves and other protective equipment to avoid all possible skin contact. Contaminated leather items, such as shoes, belts and watchbands should be removed and destroyed.

The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.

The exact breakthrough time for substances must be obtained from the manufacturer of the protective gloves and must be observed when making a final choice.

Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).

- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- Some glove polymer types are less affected by movement, and this should be taken into account when considering gloves for long-term use.
- Contaminated gloves should be replaced.

As defined in ASTM F-739-96 in any application, gloves are rated as:

- Excellent when breakthrough time > 480 min
- Good when breakthrough time > 20 min
- Fair when breakthrough time < 20 min
- Poor when glove material degrades

For general applications, gloves with a thickness typically greater than 0.35mm are recommended.

It should be emphasized that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.

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<b>Hands/feet protection</b>	<p>Glove thickness may also vary depending on the glove manufacturer, the glove type, and the glove model. Therefore, the manufacturers technical data should always be considered to ensure selection of the most appropriate glove for the task.</p> <p>Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:</p> <ul style="list-style-type: none"> <li>- Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.</li> <li>- Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential</li> <li>- Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.</li> </ul> <p>Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.</p> <ul style="list-style-type: none"> <li>- polychloroprene.</li> <li>- nitrile rubber.</li> <li>- butyl rubber.</li> <li>- fluorocautchouc.</li> <li>- polyvinyl chloride.</li> </ul> <p>Gloves should be examined for wear and/or degradation constantly.</p>
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	<p>Overall's. P.V.C apron. Barrier cream. Skin cleansing cream. Eye wash unit.</p>

### RESPIRATORY PROTECTION

Particulate. (AS/NZS 1716 & 1715, EN 143:2000 & 149:001, ANSI Z88 or national equivalent)

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
Up to 10 x ES	P1	-	PAPR-P1
	Air line*	-	-
Up to 50 x ES	Air-line**	P2	PAPR-P2
Up to 100 x ES	-	P3	-
	-	Air line*	-
100+ x ES	-	Air line**	PAPR-P3

\* - Negative pressure demand \*\* - Continuous flow

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A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO<sub>2</sub>), G = Agricultural chemicals, K = Ammonia(NH<sub>3</sub>), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
- The decision to use respiratory protection should be based on professional judgment that considers toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
- Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.
- Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
- Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU)
- Use approved positive flow mask if significant quantities of dust become airborne.
- Try to avoid creating dust conditions.

Where significant concentrations of the material are likely to enter the breathing zone, a Class P3 respirator may be required. Class P3 particulate filters are used for protection against highly toxic or highly irritant particulates. Filtration rate: Filters at least 99.95% of airborne particles Suitable for:

- Relatively small particles generated by mechanical processes e.g. grinding, cutting, sanding, drilling, sawing.
- Sub-micron thermally generated particles e.g. welding fumes, fertilizer, and bushfire smoke.
- Biologically active airborne particles under specified infection control applications e.g. viruses, bacteria, COVID-19, SARS
- Highly toxic particles e.g. Organophosphate Insecticides, Radionuclides, Asbestos

**Note:** P3 Rating can only be achieved when used with a Full-Face Respirator or Powered Air-Purifying Respirator (PAPR). If used with any other respirator, it will only provide filtration protection up to a P2 rating.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties			
Appearance	Powder: Dispersible in water.		
Physical state	Divided solids	Vapour pressure (kPa)	Not Available
Odour	Characteristic	Vapour density (Air = 1)	Not Available
Odour threshold	Not Available	Relative density (Water = 1)	~1300
pH (as supplied)	Not Available	Flash point (°C)	Not Available
Viscosity (cSt)	Not Available	Flammability	Not Available
pH as a solution (1%)	Not Available	Volatile Component (%vol)	Not Available
Solubility in water	Partly miscible	VOC g/L	Not Available

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### 10. STABILITY AND REACTIVITY

<b>Reactivity</b>	See section 7.
<b>Chemical Stability</b>	Unstable in the presence of incompatible materials. The product is considered stable. Hazardous polymerisation will not occur.
<b>Possibility of Hazardous reaction</b>	See section 7.
<b>Conditions to avoid</b>	See section 7.
<b>Incompatible materials</b>	See section 7.
<b>Hazardous decomposition products</b>	See section 5.

### 11. TOXICOLOGICAL INFORMATION

<b>Inhaled</b>	<p>There is strong evidence to suggest that this material can cause, if inhaled once, very serious, irreversible damage to organs.</p> <p>The material can cause respiratory irritation in some people. The body's response to such irritation can cause further lung damage.</p> <p>Inhalation of dust, generated by the material during normal handling, may be damaging to the health of the individual.</p> <p>Inhalation may result in ulcers or sores of the lining of the nose (nasal mucosa), and lung damage.</p> <p>People with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.</p> <p>If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures. Effects on lungs are significantly enhanced in the presence of respirable particles.</p>
<b>Ingestion</b>	<p>Accidental ingestion of the material may be damaging to the health of the individual. Not normally a hazard due to the physical form of product. The material is a physical irritant to the gastro-intestinal tract.</p>
<b>Skin Contact</b>	<p>This material can cause inflammation of the skin on contact in some people. The material may accentuate any pre-existing dermatitis condition.</p> <p>Skin contact may result in severe irritation particularly to broken skin. Ulceration known as "chrome ulcers" may develop. Chrome ulcers and skin cancer are significantly related. Open cuts abraded or irritated skin should not be exposed to this material.</p> <p>Entry into the bloodstream, through, for example, cuts, abrasions, or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p>
<b>Eye</b>	<p>If applied to the eyes, this material causes severe eye damage.</p>

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<b>Chronic</b>	<p>Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems. Strong evidence exists that this substance may cause irreversible mutations (though not lethal) even following a single exposure.</p> <p>Skin contact with the material is more likely to cause a sensitization reaction in some persons compared to the general population.</p> <p>Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Prolonged or repeated skin contact may cause drying with cracking, irritation and possible dermatitis following.</p>
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TPA Screed	TOXICITY	IRRITATION
	Not Available	Not Available

graded sand	TOXICITY	IRRITATION
	Oral (rat) LD50; 500 mg/kg [2]	Not Available

portland cement	TOXICITY	IRRITATION
	Not Available	Not Available

- Legend:**
1. Value obtained from Europe ECHA Registered Substances - Acute toxicity
  2. \* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

<b>TPA Screed</b>	<p>Laboratory (in vitro) and animal studies show, exposure to the material may result in a possible risk of irreversible effects, with the possibility of producing mutation.</p>
<b>Portland Cement</b>	<p>The following information refers to contact allergens as a group and may not be specific to this product.</p> <p>Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions.</p> <p>Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compounds. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. No significant acute toxicological data identified in literature search.</p>

## Hazardous Chemical, NON - Dangerous Goods

Acute Toxicity	✗	Carcinogenicity	✗
Skin Irritation/Corrosion	✓	Reproductivity	✗
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	✓
Respiratory or Skin Sensitisation	✓	STOT - Repeated Exposure	✓
Mutagenicity	✓	Aspiration Hazard	✗

**Legend:**

- ✗ Data either not available or does not fill the criteria for classification
- ✓ Data available to make classification

### 12. ECOLOGICAL INFORMATION

Toxicity					
	Endpoint	Test Duration (hr)	Species	Value	Source
TPA Screed	Not Available	Not Available	Not Available	Not Available	Not Available
Graded Sand	Not Available	Not Available	Not Available	Not Available	Not Available
Portland cement	Not Available	Not Available	Not Available	Not Available	Not Available

**Legend:**

1. Value obtained from Europe ECHA Registered Substances - Acute toxicity
2. \* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

#### For Metal:

Atmospheric Fate - Metal-containing inorganic substances generally have negligible vapour pressure and are not expected to partition to air.

Environmental Fate: Environmental processes, such as oxidation, the presence of acids or bases and microbiological processes, may transform insoluble metals to more soluble ionic forms. Environmental processes may enhance bioavailability and may also be important in changing solubilities.

Aquatic/Terrestrial Fate: When released to dry soil, most metals will exhibit limited mobility and remain in the upper layer; some will leach locally into ground water and/ or surface water ecosystems when soaked by rain or melted ice. A metal ion is considered infinitely persistent because it cannot degrade further. Once released to surface waters and moist soils their fate depends on solubility and dissociation in water. A significant proportion of dissolved/ sorbed metals will end up in sediments through the settling of suspended particles. The remaining metal ions can then be taken up by aquatic organisms. Ionic species may bind to dissolved ligands or sorb to solid particles in water.

Ecotoxicity: Even though many metals show few toxic effects at physiological pH levels, transformation may introduce new or magnified effects.



## Hazardous Chemical, NON - Dangerous Goods

### For Chromium:

Chromium is poorly absorbed by cells found in microorganisms, plants, and animals. Hexavalent chromate anions are readily transported into cells and toxicity is closely linked to the higher oxidation state.

Ecotoxicity - Toxicity in Aquatic Organisms: Chromium is harmful to aquatic organisms in very low concentrations. Organisms consumed by fish species are very sensitive to low levels of chromium. Chromium is toxic to fish although less so in warm water. Marked decreases in toxicity are found with increasing pH or water hardness; changes in salinity have little if any effect. Chromium appears to make fish more susceptible to infection. High concentrations can damage and/or accumulate in various fish tissues and in invertebrates such as snails and worms. Reproduction of water fleas is affected by exposure to 0.01 mg/kg hexavalent chromium/L. Toxicity of chromium in fresh-water organisms resulted in mortality rates of 50%. The most sensitive species to the hexavalent chromium anion are invertebrates, scud, fathead minnow, rainbow trout, cladoceran and water flea vertebrate species and guppy.

### Toxicity in Microorganisms:

In general, toxicity for most microorganisms occurs in the range of 0.05 -5 mg chromium/kg. Trivalent chromium is less toxic than the hexavalent form. The main signs of toxicity are inhibition of growth and the inhibition of photosynthesis or protein synthesis. Gram-negative soil bacteria are generally more sensitive to hexavalent chromium (1-12 mg/kg) than the gram-positive types. Toxicity to trivalent chromium is not observed at similar levels. Soil microbial transformation processes such as nitrification may be affected by low levels of hexavalent chromium (1 mg/kg). Chromium should not be introduced to municipal sewage treatment facilities.

### Toxicity in Plants:

Chromium in high concentrations can be toxic for plants. The main feature of chromium intoxication is chlorosis, which is similar to iron deficiency. Chromium affects carbohydrate metabolism and leaf chlorophyll concentration decreases with hexavalent chromium concentration (0.01-1 mg/L). The hexavalent form appears to be more toxic than the trivalent species.

### Water Standards:

Chromium is identified as a hazardous substance in the Federal (U.S.) Water Pollution Control Act and further regulated by Clean Air Water Act Amendments (US). These regulations apply to discharge. The US Primary drinking water Maximum Contaminant Level (MCL), for chromium, is 0.05 mg/L. (total chromium).

### For chromium:

Aquatic Fate - Most chromium released into water will be deposited in the sediment. A small percentage of chromium can be found in soluble and insoluble forms with soluble chromium making up a very small percentage of the total chromium. Most of the soluble chromium is present as chromium (VI) and soluble chromium (III) complexes. In the aquatic phase, chromium (III) occurs mostly as suspended solids adsorbed onto clayish materials, organics, or iron oxide present in water. Soluble forms and suspended chromium can undergo intramedia transport. Chromium (VI) in water will eventually be reduced to chromium (III) by organic matter in the water. This process may be slower depending on the type and amount of organic material present and on the redox condition of the water. The reaction was generally faster under anaerobic than aerobic conditions. The oxidation of chromium (III) to chromium (VI) during chlorination of water was highest in the pH range of 5.5 - 6.0.

### Atmospheric Fate:

Transport of chromium from water to the atmosphere is not likely, except by transport in windblown sea sprays.

Terrestrial Fate: Ecotoxicity - Bioaccumulation is not expected to occur in rainbow trout. Bioaccumulation in bottom feeder bivalves, such as oysters, blue mussel, and soft-shell clam is low. Chromium ranges from slightly toxic to highly toxic in water fleas. Chromium is not expected to biomagnify in the aquatic food chain. Chromium (III) has very low solubility and low mobility in the environment and low toxicity in living organisms. In these forms, chromium is relatively soluble, mobile, and toxic to living organisms. Plants - Bioaccumulation of chromium from soil to above-ground parts of plants are unlikely. There is no indication of biomagnification of chromium along the terrestrial food chain (soil-plant-animal). Chromium concentration in plants may vary with geographic location. Soil - Chromium (VI) may be present in soil as chromate and



## Hazardous Chemical, NON - Dangerous Goods

chromic acid. The fate of chromium in soil is dependent upon the chromium species, which is a function of redox potential and soil pH. Most commonly, soil chromium is in the chromium (III) state. In deeper, anaerobic soils, chromium (VI) will be reduced to chromium (III) by disulfur and ferrous sulfate in soil. The reduction of chromium (VI) to chromium (III) is possible in aerobic soils that contain appropriate organic energy sources. The reduction of chromium (VI) to chromium (III) is facilitated by low pH. Chromium (VI) may exist in the aerobic zone of some natural soil. The oxidation of chromium (III) to chromium (VI) is facilitated by the presence of low oxidisable organic substances, oxygen, manganese dioxide, and moisture. However, when availability of mobile chromium (III) is low, a large portion of chromium in soil will not be oxidized to chromium (VI), even in the presence of magnesium dioxide and favorable pH. Organic forms of chromium (III) are more easily oxidized than insoluble oxides. Factors affecting the microbial reduction of chromium (VI) to chromium (III) include biomass concentration, initial chromium (VI) concentration, temperature, pH, carbon source, oxidation-reduction potential and the presence of both oxyanions and metal cations. Although high levels of chromium (VI) are toxic to most microbes, several resistant bacterial species have been identified which could ultimately be employed in remediation strategies. Most soil chromium is present mainly as insoluble chromium oxide and  $nH_2O$  and is not very mobile. Chromium was not found in leachate from soil, possibly because it formed complexes with organic matter. The leachability of chromium (VI) increases as soil pH increases. A small percentage of total chromium in soil exists as soluble chromium (VI) and chromium (III), which are more mobile in soil. Sorption depends primarily on the clay content of the soil and, to a lesser extent, on the amount of iron oxide and the organic content.

### Ecotoxicity:

Chromium irreversibly sorbed onto soil will not be bio-available to plants and animals under any condition.

### Atmospheric Fate:

Chromium in soil may be transported to the atmosphere as an aerosol. The low pH of acid rain may facilitate leaching of acid-soluble chromium (III) and (VI) into soil. In the atmosphere, chromium (VI) may be reduced to chromium (III) at a significant rate if vanadium ( $V^{2+}$ ,  $V^{3+}$  and  $VO^+$ ), ferrous sulfate, bicarbonate ions and arsenic are present. The estimated half-life of atmospheric chromium (VI) reduction to chromium (III) has been reported to be from 16 hrs to about 5 days.

### Aquatic Fate:

Surface runoff can transport soluble and bulk precipitates of chromium to surface water. Soluble and unadsorbed chromium (III) and (VI) complexes in soil may leach into groundwater.

**DO NOT discharge into sewer or waterways.**

Persistence and degradability		
Ingredient	Persistence: Water/Soil	Persistence: Air
	No Data available for all ingredients	No Data available for all ingredients

Bioaccumulative potential	
Ingredient	Bioaccumulative
	No Data available for all ingredients

Mobility in soil	
Ingredient	Mobility
	No Data available for all ingredients

## Hazardous Chemical, NON - Dangerous Goods

### 13. DISPOSAL CONSIDERATIONS

Waste treatment methods	
Product / Packaging disposal	<p>Containers may still present a chemical hazard/danger when empty. Return to supplier for reuse/recycling if possible.</p> <p>Otherwise:</p> <p>If the container cannot be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury them at an authorized landfill.</p> <p>Where possible retain label warnings and SDS and observe all notices pertaining to the product.</p> <p>Legislation addressing waste disposal requirements may differ by country, state and/or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"><li>- Reduction</li><li>- Reuse</li><li>- Recycling</li><li>- Disposal (if all else fails)</li></ul> <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf-life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate. In most instances the supplier of the material should be consulted.</p> <p><b>DO NOT allow wash water from cleaning or process equipment to enter drains.</b></p> <p>It may be necessary to collect all wash water for treatment before disposal.</p> <p>In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. Where in doubt contact the responsible authority.</p> <p>Recycle wherever possible or consult the manufacturer for recycling options. Consult State Land Waste Management Authority for disposal.</p> <p>Bury residue in an authorized landfill.</p> <p>Recycle containers if possible or dispose of in an authorized landfill.</p>

### 14. TRANSPORT INFORMATION

Labels Required	
Marine Pollutant	No
HAZCHEM	Not Applicable

Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

## Hazardous Chemical, NON - Dangerous Goods

### Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Portland cement	Not Available
HAZCHEM	Not Available

### 15. REGULATORY INFORMATION

Safety, health, and environmental regulations / legislation specific for the substance or mixture.

#### Portland cement is found on the following regulatory lists

Australian Inventory of Industrial Chemicals (AIIC)

#### Graded sand is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals	Chemical Footprint Project - Chemicals of High Concern List
Australia Model Work Health and Safety Regulations – Hazardous chemicals (other than lead) requiring health monitoring	International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
Australian Inventory of Industrial Chemicals (AIIC)	International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 1: carcinogenic to humans.

#### National Inventory Status

National Inventory	Status
Australia – AIIC / Australia Non – Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (silica crystalline - quartz; portland cement)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	No (portland cement)
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	No (portland cement)
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	Yes

## Hazardous Chemical, NON - Dangerous Goods

**Legend:**

Yes = All CAS declared ingredients are on the inventory  
No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets)

### 16. OTHER INFORMATION

Material Safety Data Sheets are updated frequently. Please ensure that you have a current copy. MSDS may be obtained from the following website: [www.tpa-aus.com.au](http://www.tpa-aus.com.au)

If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact Tiling Products Australia. This MSDS summarizes at the date of issue our best knowledge of the health and safety hazard information of the product, and in particular how to safely handle and use the product in the workplace. Since Tiling Products Australia cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, review this MSDS in the context of how the user intends to handle and use the product in the workplace.

It is the user's obligation to evaluate and use this product safely, and to comply with all relevant Federal, State and Local Government laws and regulations. Tiling Products Australia shall not be responsible for loss, damage or injury resulting from reliance upon or failure to adhere to any recommendation or information contained herein, from abnormal use of the material, or any hazard inherent in the nature of the material.

DOCUMENT CONTROL	
Product	TPA Screed
Initial Issue	March 2024
Author	SR