WIA AUSTFIL 70C-6M

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
WIA AUSTFIL 70C-6M

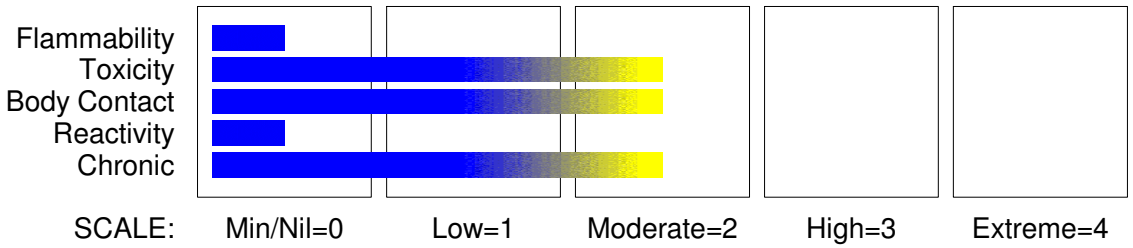
SYNONYMS

"metal cored wire", electrode, "70 C 6 M"

PRODUCT USE
Metal- cored wire designed for high speed fillet and butt welding.

SUPPLIER
Company: Welding Industries of Australia
Address:
5 Allen Street
Melrose Park
SA, 5039
AUST
Telephone: +61 8 8276 6494
Telephone: 1300 300 884
Fax: 1300 301 884

HAZARD RATINGS



Section 2 - HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS. According to the Criteria of NOHSC, and the ADG Code.

continued...

POISONS SCHEDULE

None

RISK

Risk Codes	Risk Phrases
R40(3)	Limited evidence of a carcinogenic effect.

SAFETY

Safety Codes	Safety Phrases
S36	Wear suitable protective clothing.
S51	Use only in well ventilated areas.
S09	Keep container in a well ventilated place.
S401	To clean the floor and all objects contaminated by this material use water and detergent.
S13	Keep away from food drink and animal feeding stuffs.
S27	Take off immediately all contaminated clothing.
S46	If swallowed IMMEDIATELY contact Doctor or Poisons Information Centre (show this container or label).

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
carbon steel tube, containing		
iron	7439-89-6	10
titanium dioxide	13463-67-7	<6
manganese	7439-96-5	<6
calcined kaolin	66402-68-4	<6
silicon	7440-21-3	1
silica crystalline - quartz		0.7
kaolin		<0.7
calcium fluoride		<0.7
In use product generates		
welding fumes		>60
iron oxide fume		
manganese fume	7439-96-5	
fluoride fume	16984-48-8	
silica welding fumes	69012-64-2	
action of the arc on air may generate		
ozone	10028-15-6	
nitrogen oxides	Mixture	

continued...

Section 4 - FIRST AID MEASURES

SWALLOWED

· Immediately give a glass of water.
· First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

EYE

If this product comes in contact with the eyes:
· Wash out immediately with fresh 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.
· If pain persists or recurs seek medical attention.
· Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

If skin or hair contact occurs:
· Flush skin and hair with running water (and soap if available).
· Seek medical attention in event of irritation.

INHALED

· 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 airway, 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.

NOTES TO PHYSICIAN

Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

· There is no restriction on the type of extinguisher which may be used.
· Use extinguishing media suitable for surrounding area.

FIRE FIGHTING

· Alert Fire Brigade and tell them location and nature of hazard.
· Wear breathing apparatus plus protective gloves for fire only.
· Prevent, by any means available, spillage from entering drains or water courses.
· Use fire fighting 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.

FIRE/EXPLOSION HAZARD

· Non combustible.

continued...

· Not considered a significant fire risk, however containers may burn.
May emit poisonous fumes.

FIRE INCOMPATIBILITY
Welding arc and metal sparks can ignite combustibles.
No known incompatibility with normal range of industrial materials.

HAZCHEM: None

Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

MINOR SPILLS
- Clean up all spills immediately.
- Avoid breathing vapours/ aerosols/ or dusts and avoid contact with skin and eyes.
- Control personal contact by using protective equipment.
- Contain and absorb spill with sand, earth, inert material or vermiculite.
- Place in a suitable labelled container for waste disposal.

MAJOR SPILLS
· Clean up all spills immediately.
· Wear protective clothing, safety glasses, dust mask, gloves.
· Secure load if safe to do so. Bundle/collect recoverable product.
· Use dry clean up procedures and avoid generating dust.
· Vacuum up (consider explosion-proof machines designed to be grounded during storage and use).
· Water may be used to prevent dusting.
· Collect remaining material in containers with covers for disposal.
· Flush spill area with water.

EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)
The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

life-threatening health effects is:
iron 500 mg/m³

irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:
iron 50 mg/m³

other than mild, transient adverse effects without perceiving a clearly defined odour is:
iron 30 mg/m³

The threshold concentration below which most people will experience no appreciable risk of health effects:
iron 10 mg/m³

American Industrial Hygiene Association (AIHA)

Ingredients considered according to the following cutoffs
Very Toxic (T+) >= 0.1% Toxic (T) >= 3.0%

continued...

R50	>= 0.25%	Corrosive (C)	>= 5.0%
R51	>= 2.5%		
else	>= 10%		

where percentage is percentage of ingredient found in the mixture

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- 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.
- DO NOT enter confined spaces until atmosphere has been checked.
- DO NOT allow material to contact humans, exposed food or food utensils.
- Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke.
- 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 laundered separately. Launder contaminated clothing before re -use.
- Use good occupational work practice.
- Observe manufacturer's storing and handling recommendations.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

SUITABLE CONTAINER

- Polyethylene or polypropylene container.
- Packing as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

STORAGE INCOMPATIBILITY

Welding electrodes should not be allowed to come into contact with strong acids or other substances which are corrosive to metals.

STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS

+	X	+	X	0	+

+: May be stored together

continued...

O: May be stored together with specific preventions
X: Must not be stored together

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA mg/m³	STEL mg/m³	Peak ppm	Peak mg/m³
Australia Exposure Standards	iron (Inspirable dust (Not specified))	10			
Australia Exposure Standards	titanium dioxide (Titanium dioxide (a))	10			
Australia Exposure Standards	manganese (Manganese, fume (as Mn))	1	3		
Australia Exposure Standards	manganese (Manganese, dust & compounds (as Mn))	1			
Australia Exposure Standards	calcined kaolin (Inspirable dust (Not specified))	10			
Australia Exposure Standards	silicon (Silicon (a))	10			
Australia Exposure Standards	manganese fume (Manganese, fume (as Mn))	1	3		
Australia Exposure Standards	manganese fume (Manganese, dust & compounds (as Mn))	1			
Australia Exposure Standards	fluoride fume (Fluorides (as F))	2.5			
Australia Exposure Standards	ozone (Ozone)			0.1	0.2

The following materials had no OELs on our records
• silica welding fumes: CAS:69012- 64- 2

EMERGENCY EXPOSURE LIMITS

Material	Revised IDLH Value (mg/m3)	Revised IDLH Value (ppm)
titanium dioxide	5, 000	
manganese	500	
manganese fume	500	
ozone		5

continued...

MATERIAL DATA

Not available. Refer to individual constituents.

INGREDIENT DATA

OZONE:

TITANIUM DIOXIDE:

Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations. Present day expectations require that nearly every individual should be protected against even minor sensory irritation and exposure standards are established using uncertainty factors or safety factors of 5 to 10 or more. On occasion animal no -observable-effect-levels (NOEL) are used to determine these limits where human results are unavailable. An additional approach, typically used by the TLV committee (USA) in determining respiratory standards for this group of chemicals, has been to assign ceiling values (TLV C) to rapidly acting irritants and to assign short-term exposure limits (TLV STELs) when the weight of evidence from irritation, bioaccumulation and other endpoints combine to warrant such a limit. In contrast the MAK Commission (Germany) uses a five -category system based on intensive odour, local irritation, and elimination half-life. However this system is being replaced to be consistent with the European Union (EU) Scientific Committee for Occupational Exposure Limits (SCOEL); this is more closely allied to that of the USA.

OSHA (USA) concluded that exposure to sensory irritants can:

· cause inflammation
· cause increased susceptibility to other irritants and infectious agents
· lead to permanent injury or dysfunction
· permit greater absorption of hazardous substances and
· acclimate the worker to the irritant warning properties of these substances thus increasing the risk of overexposure.

CALCINED KAOLIN:

IRON:

IRON:

These "dusts" have little adverse effect on the lungs and do not produce toxic effects or organic disease. Although there is no dust which does not evoke some cellular response at sufficiently high concentrations, the cellular response caused by P.N.O.C.s has the following characteristics:

· the architecture of the air spaces remain intact,
· scar tissue (collagen) is not synthesised to any degree,
· tissue reaction is potentially reversible.

Extensive concentrations of P.N.O.C.s may:

· seriously reduce visibility,
· cause unpleasant deposits in the eyes, ears and nasal passages,
· contribute to skin or mucous membrane injury by chemical or mechanical action, per se, or by the rigorous skin cleansing procedures necessary for their removal. [ACGIH]

This limit does not apply:

· to brief exposures to higher concentrations
· nor does it apply to those substances that may cause physiological impairment at lower concentrations but for which a TLV has as yet to be determined.

This exposure standard applies to particles which

· are insoluble or poorly soluble* in water or, preferably, in aqueous lung fluid (if data is available) and
· have a low toxicity (i.e.. are not cytotoxic, genotoxic, or otherwise chemically

continued...

reactive with lung tissue, and do not emit ionizing radiation, cause immune sensitization , or cause toxic effects other than by inflammation or by a mechanism of lung overload).

TITANIUM DIOXIDE:

It is the goal of the ACGIH (and other Agencies) to recommend TLVs (or their equivalent) for all substances for which there is evidence of health effects at airborne concentrations encountered in the workplace.

At this time no TLV has been established, even though this material may produce adverse health effects (as evidenced in animal experiments or clinical experience). Airborne concentrations must be maintained as low as is practically possible and occupational exposure must be kept to a minimum.

NOTE: The ACGIH occupational exposure standard for Particles Not Otherwise Specified (P.N.O.S) does NOT apply.

WARNING: This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.

IDLH Level: 5000 mg/m3

Animal studies at 10 mg/m3 show no significant fibrosis, possibly reversible tissue reaction and the architecture of lung air spaces remains intact.

MANGANESE:

Ceiling values were recommended for manganese and compounds in earlier publications. As manganese is a chronic toxin a TWA is considered more appropriate. Because workers exposed to fume exhibited manganism at air-borne concentrations below those that affect workers exposed to dust a lower value has been proposed to provide an extra margin of safety. This value is still above that experienced by two workers exposed to manganese fume in the course of one study.

A number of studies have shown that susceptibility to the effects of manganese at or about 1 - 5 mg/m3 (TWA) can lead to clinical manifestations of manganism or more commonly to the development of indicators of sub-clinical manganism (e.g. hand tremor, exaggerated reflexes, short-term memory deficits, poor psychomotor performance). Controlling long -term exposure to the recommended ES TWA level or below should provide protection for those individuals susceptible to neurological effects of prolonged exposure.

SILICON:

CEL TWA: 5 mg/m3

NOTE: The CEL TWA is consistent with the value recommended in the Norwegian ferro-alloy industry (furnace room dust/mixed dust).

Silicon dust appears to have little adverse effect on the lungs and is not implicated in the genesis of organic disease or in the production of toxic effects. The TLV-TWA is thought to be protective against physical irritation and possible chronic respiratory effects encountered at higher levels.

MANGANESE FUME:

Not available

FLUORIDE FUME:

Not available

SILICA WELDING FUMES:

Not available

OZONE:

NOTE: Detector tubes for ozone, measuring in excess of 0.05 ppm, are commercially available.

continued...

Exposure at 0.2 ppm appears to produce mild acute but not cumulative effects. It is thought that exposures of the order of 0.1 ppm will be tolerated by most workers including asthmatics. Chronic exposure at 0.1 ppm or more can induce significant adverse effects in the lower respiratory tract of both normal and atopic individuals.

Human exposure for 2 hours at an average concentration of 1.5 ppm ozone resulted in a 20% reduction in timed vital capacity of the lung and other effects. Concentrations of ozone in excess of a few tenths ppm cause occasional discomfort to exposed individuals manifest as headache, dryness of the throat and mucous membranes of the eyes and nose following exposures of short duration.

Exposure to ozone during moderate to heavy work loads results in significantly decreased forced vital capacity (FVC) and forced expiratory volume in one second (FEV1) at 0.12 ppm; this is effect is greater at higher concentrations.

NITROGEN OXIDES:

Data for nitrogen dioxide:

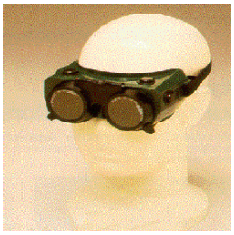
TLV TWA:	3 ppm	6 mg/m3	STEL:	5 ppm	10 mg/m3
ES TWA:	3 ppm	5.6 mg/m3	STEL:	5 ppm	9.4 mg/m3

IDLH Level: 50 ppm

NOTE: Detector tubes for nitrogen dioxide, measuring in excess of 0.5 ppm, are commercially available.

PERSONAL PROTECTION





EYE

For most open welding/brazing operations, goggles, even with appropriate filters, will not afford sufficient facial protection for operators. Where possible use welding helmets or handshields corresponding to AS 1336 and AS 1338 which provide the maximum possible facial protection from flying particles and fragments. [WRIA-WTIA Technical Note 7].

· Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens 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 hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

Welding helmet with suitable filter. Welding hand shield with suitable filter.

HANDS/FEET

Welding Gloves

Safety footwear.

OTHER

Aprons, sleeves, shoulder covers, leggings or spats of pliable flame resistant leather or other suitable materials may also be required in positions where these areas of the body

continued...

will encounter hot metal.
· Eyewash unit.
Overalls.

RESPIRATOR
Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Breathing Zone Level ppm (volume)	Maximum Protection Factor	Half- face Respirator	Full- Face Respirator
1000	10	BE- - AUS	-
1000	50	-	BE- - AUS
5000	50	Airline *	-
5000	100	-	BE- - 2
10000	100	-	BE- - 3
	100+		Airline**

* - Continuous Flow ** - Continuous-flow or positive pressure demand.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.
For further information consult site specific CHEMWATCH data (if available), or your Occupational Health and Safety Advisor.

ENGINEERING CONTROLS
Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection.
An approved self contained breathing apparatus (SCBA) may be required in some situations.
Provide adequate ventilation in warehouse or closed storage area. 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.

Type of Contaminant:	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.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1- 2.5 m/s (200- 500 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.)

continued...

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

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 of 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.
If risk of inhalation or overexposure exists, wear SAA approved respirator or work in fume hood.
Special ventilation requirements apply for processes which result in the generation of barium, chromium, lead, or nickel fume and in those processes which generate ozone.
The use of mechanical ventilation by local exhaust systems is required as a minimum in all circumstances (including outdoor work). (In confined spaces always check that oxygen has not been depleted by excessive rusting of steel or snowflake corrosion of aluminium)
Local exhaust systems must be designed to provide a minimum capture velocity at the fume source, away from the worker, of 0.5 metre/sec. 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.

Type of Contaminant:	Air Speed:
welding, brazing fumes (released at relatively low velocity into moderately still air)	0.5- 1.0 m/s (100- 200 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

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 of distance

continued...

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 welding or brazing fumes generated 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.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Shine silver electrode; insoluble in water. Typical all weld analysis: C 0.038; Mn 1.46; Si 0.68; S 0.009; P 0.012; Cr 0.01; Ni 0.02; V 0.01; Cu 0.02. Weld metal gives a yield strength of 610MPA, tensile strength of 634MPA and elongation of 25%.

PHYSICAL PROPERTIES

Does not mix with water.

Molecular Weight: Not Applicable	Boiling Range (°C): Not Applicable
Melting Range (°C): Not Available	Specific Gravity (water=1): Not Available
Solubility in water (g/L): Immiscible	pH (as supplied): Not Applicable
pH (1% solution): Not Applicable	Vapour Pressure (kPa): Not Applicable
Volatile Component (%vol): Not Applicable	Evaporation Rate: Not Applicable
Relative Vapour Density (air=1): Not Applicable	Flash Point (°C): Not Applicable
Lower Explosive Limit (%): Not Applicable	Upper Explosive Limit (%): Not Applicable
Autoignition Temp (°C): Not Applicable	Decomposition Temp (°C): Not Available
State: Manufactured	Viscosity: Not Applicable

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

Product is considered stable and hazardous polymerisation will not occur.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (eg. liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.

continued...

EYE
Fumes from welding/brazing operations may be irritating to the eyes.

SKIN
Skin contact does not normally present a hazard, though it is always possible that occasionally individuals may be found who react to substances usually regarded as inert.

INHALED
Fumes evolved during welding operations may be irritating to the upper-respiratory tract and may be harmful if inhaled.
Effects on lungs are significantly enhanced in the presence of respirable particles.

CHRONIC HEALTH EFFECTS
Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.
Welding fume with high levels of ferrous materials may lead to particle deposition in the lungs (siderosis) after long exposure. This clears up when exposure stops. Chronic exposure to iron dusts may lead to eye disorders.
Ozone is suspected to produce lung cancer in laboratory animals; no reports of this effect have been documented in exposed human populations.
Other welding process exposures can arise from radiant energy UV flash burns, thermal burns or electric shock
The welding arc emits ultraviolet radiation at wavelengths that have the potential to produce skin tumours in animals and in over-exposed individuals, however, no confirmatory studies of this effect in welders have been reported.
Chronic excessive intake of iron have been associated with damage to the liver and pancreas. People with a genetic disposition to poor control over iron are at an increased risk. Iron overload in men may lead to diabetes, joint inflammation, liver cancer, heart irregularities and problems with other organs.
Metallic dusts generated by the industrial process give rise to a number of potential health problems. The larger particles, above 5 micron, are nose and throat irritants. Smaller particles however, may cause lung deterioration. Particles of less than 1.5 micron can be trapped in the lungs and, dependent on the nature of the particle, may give rise to further serious health consequences.

TOXICITY AND IRRITATION
Not available. Refer to individual constituents.

IRON:
unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY	IRRITATION
Oral (rat) LD50: 98600 mg/kg	Nil Reported [Patty]

TITANIUM DIOXIDE:
unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY	IRRITATION
	Skin (human) 0.3: mg/3d- I Mild

The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.

continued...

MANGANESE:

TOXICITY	IRRITATION
Oral (rat) LD50: 9000 mg/kg	Skin (rabbit): 500 mg/24h - Mild
Inhalation (man) TCLo: 2.3 mg/m³	Eye (rabbit): 500 mg/24h - Mild

CALCINED KAOLIN:
No data of toxicological significance identified in literature search.

SILICON:
unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY	IRRITATION
Oral (rat) LD50: 3160 mg/kg	Nil Reported

MANGANESE FUME:
unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY	IRRITATION
Inhalation (man) TCLo: 2.3 mg/m³	Skin (rabbit) 500mg/24H Mild
Oral (rat) LD50: 9000 mg/kg	Eye (rabbit) 500mg/24H Mild

The substance has been investigated as a tumorigen;
found to be an equivocal tumorigenic agent by RTECS.

FLUORIDE FUME:
unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY	IRRITATION
Oral (human) LDLo: 50 mg/kg	Nil Reported
Oral (human) TDLo: 3 mg/kg	

SILICA WELDING FUMES:
unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY	IRRITATION
Oral (rat) LD50: 3160 mg/kg	No data [RTECS]

Reports indicate high/prolonged exposures to amorphous silicas induced lung fibrosis in experimental animals; in some experiments these effects were reversible. [PATTYS]
The substance is classified by IARC as Group 3:
NOT classifiable as to its carcinogenicity to humans.
Evidence of carcinogenicity may be inadequate or limited in animal testing.

OZONE:
unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.
Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder

continued...

is characterised by dyspnea, cough and mucus production.
NOTE: Aggravates chronic obstructive pulmonary diseases. Suspected also of increasing the risk of ac

NITROGEN OXIDES:
Data for nitrogen dioxide:

TOXICITY	IRRITATION
Inhalation (human) LCLo: 200 ppm/1m	Nil Reported
Inhalation (man) TCLo: 6200 ppb/10m	

Substance has been investigated as a mutagen and reproductive effector.
NOTE: Interstitial edema, epithelial proliferation and, in high concentrations, fibrosis and emphysema develop after repeated exposure.

MATERIAL	CARCINOGEN	REPROTOXIN	SENSITISER	SKIN
titanium dioxide	IARC:2B			
manganese		ILOM ILOEl		
manganese fume		ILOM ILOEl		

CARCINOGEN
IARC: International Agency for Research on Cancer (IARC) Carcinogens: titanium dioxide
Category: 2B
REPROTOXIN
ILOM: ILO Agents toxic to the male reproductive system: manganese
REPROTOXIN
ILOEl: ILO Chemicals in the electronics industry that have toxic effects on reproduction: manganese
REPROTOXIN
ILOM: ILO Agents toxic to the male reproductive system: manganese fume
REPROTOXIN
ILOEl: ILO Chemicals in the electronics industry that have toxic effects on reproduction: manganese fume

Section 12 - ECOLOGICAL INFORMATION

DO NOT discharge into sewer or waterways.
Refer to data for ingredients, which follows:

TITANIUM DIOXIDE:
DO NOT discharge into sewer or waterways.

SILICA WELDING FUMES:
No data

OZONE:
DO NOT discharge into sewer or waterways.
The material is classified as an ecotoxin* because the Fish LC50 (96 hours) is less than or equal to 0.1 mg/l

* Classification of Substances as Ecotoxic (Dangerous to the Environment)
Appendix 8, Table 1
Compiler's Guide for the Preparation of International Chemical Safety Cards: 1993
Commission of the European Communities.
Ozone is found in the atmosphere in varying proportions as it is produced continuously in

continued...

the outer layers of the atmosphere by the action of solar UV radiation on oxygen in the air. It is also formed locally in the air from lightning and from electrical sparks. In the upper atmosphere it inhibits penetration of UV radiation and so is beneficial to life. At ground level it is a harmful pollutant because of the damage it can cause to lungs and to a wide range of materials

Section 13 - DISPOSAL CONSIDERATIONS

· Containers may still present a chemical hazard/ danger when empty.
· Return to supplier for reuse/ recycling if possible.
Otherwise:
· If container can not 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 at an authorised landfill.
· Where possible retain label warnings and MSDS and observe all notices pertaining to the product.

Section 14 - TRANSPORTATION INFORMATION

HAZCHEM: None

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS:UN, IATA, IMDG

Section 15 - REGULATORY INFORMATION

POISONS SCHEDULE: None

REGULATIONS
WIA Austfil 70C-6M (CAS: None):
No regulations applicable

iron (CAS: 7439-89-6) is found on the following regulatory lists;
Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (AQUA/1 to 6 - inorganic chemicals)
Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (Domestic water supply - inorganic chemicals)
Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (IRRIG - inorganic chemicals)
Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (STOCK - inorganic chemicals)
Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (Aquatic habitat)
Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (IRRIG)
Australia - Australian Capital Territory Environment Protection Regulation Pollutants entering waterways - Agricultural uses (Stock)
Australia - Australian Capital Territory Environment Protection Regulation Pollutants entering waterways - Domestic water quality
Australia Exposure Standards
Australia High Volume Industrial Chemical List (HVICL)
Australia Inventory of Chemical Substances (AICS)
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 2
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 4
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 6
OECD Representative List of High Production Volume (HPV) Chemicals
WHO Guidelines for Drinking-water Quality - Chemicals for which guideline values have not been established

titanium dioxide (CAS: 13463-67-7) is found on the following regulatory lists;
Australia Exposure Standards
Australia High Volume Industrial Chemical List (HVICL)
Australia Inventory of Chemical Substances (AICS)
Australia Therapeutic Goods Administration (TGA) Substances that may be used as active ingredients in Listed medicines
Australia Therapeutic Goods Administration (TGA) Sunscreening agents permitted as active ingredients in listed products
CODEX General Standard for Food Additives (GSFA) - Additives Permitted for Use in Food in General, Unless Otherwise Specified, in Accordance with GMP
International Agency for Research on Cancer (IARC) Carcinogens

continued...

OECD Representative List of High Production Volume (HPV) Chemicals
titanium dioxide (CAS: 1317-70-0) is found on the following regulatory lists;
Australia Inventory of Chemical Substances (AICS)
OECD Representative List of High Production Volume (HPV) Chemicals
titanium dioxide (CAS: 1317-80-2) is found on the following regulatory lists;
Australia Inventory of Chemical Substances (AICS)
OECD Representative List of High Production Volume (HPV) Chemicals

manganese (CAS: 7439-96-5) is found on the following regulatory lists;
Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (Domestic water supply - inorganic chemicals)
Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (IRRIG - inorganic chemicals)
Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (IRRIG)
Australia - Australian Capital Territory Environment Protection Regulation Pollutants entering waterways - Domestic water quality
Australia Exposure Standards
Australia Inventory of Chemical Substances (AICS)
Australia National Pollutant Inventory
OECD Representative List of High Production Volume (HPV) Chemicals
WHO Guidelines for Drinking-water Quality - Guideline values for chemicals that are of health significance in drinking-water

calcined kaolin (CAS: 66402-68-4) is found on the following regulatory lists;
Australia Exposure Standards
Australia High Volume Industrial Chemical List (HVICL)
Australia Inventory of Chemical Substances (AICS)
Australia National Pollutant Inventory
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 4
OECD Representative List of High Production Volume (HPV) Chemicals

silicon (CAS: 7440-21-3) is found on the following regulatory lists;
Australia Exposure Standards
Australia High Volume Industrial Chemical List (HVICL)
Australia Inventory of Chemical Substances (AICS)
OECD Representative List of High Production Volume (HPV) Chemicals

manganese fume (CAS: 7439-96-5) is found on the following regulatory lists;
Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (Domestic water supply - inorganic chemicals)
Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (IRRIG - inorganic chemicals)
Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (IRRIG)
Australia - Australian Capital Territory Environment Protection Regulation Pollutants entering waterways - Domestic water quality
Australia Exposure Standards
Australia Inventory of Chemical Substances (AICS)
Australia National Pollutant Inventory
OECD Representative List of High Production Volume (HPV) Chemicals
WHO Guidelines for Drinking-water Quality - Guideline values for chemicals that are of health significance in drinking-water

fluoride fume (CAS: 16984-48-8) is found on the following regulatory lists;
Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (IRRIG - inorganic chemicals)
Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (STOCK - inorganic chemicals)
Australia Dangerous Goods Code Draft 7th Edition - List of Common Pesticides with Corresponding UN Numbers
Australia Exposure Standards
Australia National Pollutant Inventory
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Appendix E (Part 2)
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 2
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 4
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 6

silica welding fumes (CAS: 69012-64-2) is found on the following regulatory lists;
Australia Inventory of Chemical Substances (AICS)
OECD Representative List of High Production Volume (HPV) Chemicals

ozone (CAS: 10028-15-6) is found on the following regulatory lists;
Australia Exposure Standards

No data available for titanium dioxide as CAS: 12188-41-9.
No data available for nitrogen oxides as CAS: Mixture.

Section 16 - OTHER INFORMATION

INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name	CAS
titanium dioxide	13463- 67- 7, 1317- 70- 0, 1317- 80- 2, 12188- 41- 9

continued...

EXPOSURE STANDARD FOR MIXTURES

"Worst Case" computer-aided prediction of vapour components/concentrations:
Composite Exposure Standard for Mixture (TWA) (mg/m3): 6 mg/m³
If the breathing zone concentration of ANY of the components listed below is exceeded, "Worst Case" considerations deem the individual to be overexposed.
Component Breathing Zone ppm Breathing Zone mg/m3 Mixture Conc: (%).

Component	Breathing zone (ppm)	Breathing Zone (mg/m³)	Mixture Conc (%)
nitrogen oxides	3.00	6.0000	0.1

Operations which produce a spray/mist or fume/dust, introduce particulates to the breathing zone.
If the breathing zone concentration of ANY of the components listed below is exceeded, "Worst Case" considerations deem the individual to be overexposed.
At the "Composite Exposure Standard for Mixture" (TWA) (mg/m3): 6 mg/m³
Component Breathing Zone ppm Breathing Zone mg/m3 Mixture Conc (%).

Component	Breathing Zone (mg/m³)	Concentration (%)
silicon	60.0000	1.0

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

Issue Date: 14-Jul-2006
Print Date: 23-Oct-2007