

Material Safety Data Sheet

Page 1 of 3

Infosafe No. 1ST1H Issue Date: August 2001 ISSUED by BHPSTRCT
Product Name: DURAGAL® PROFILES- FLATS, CHANNELS AND ANGLES- USA

Not Classified as Hazardous

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name DURAGAL® PROFILES- FLATS, CHANNELS AND ANGLES- USA
Product Use In-line hot dip galvanized steel sections for structural, machinery, construction applications etc.
COATING USED: In-line hot-dip galvanized zinc, minimum average 100 g/m², (0.325 oz/ft²), with the zinc surface passivated by a surface conversion treatment less than 1 micrometre (0.04 mil) thick. All channels and angles larger than 2 inches are further coated with an acrylic based polymer, typically 8 micrometres (0.3mil) thick applied over the passivated zinc.
Company Name OneSteel Pipe & Tube, Newcastle (ABN 50007 519646)
Address PO BOX 156 Newcastle NSW AUSTRALIA. 2300
Telephone/Telex Number Ph: +61 2 4941 1711 Fax: +61 2 4941 1700

2. COMPOSITION, INFORMATION ON INGREDIENTS

Ingredients	Name	CAS	Proportion
	Steel (Fe)	7439-89-6	95-100% (*)
	Zinc	7440-66-6	0-5%
	Manganese (Mn)	7439-96-5	.20-1.30%
	Chromate passivation treatment, less than 1 micrometre (0.04 mil) thick, with 1-2 microgram Cr/cm ²		0-0.10%

Other Information * Steel Section, in line galvanized.

3. HAZARDS IDENTIFICATION

Methods of Exposure Exposures to welding fume and gases can be highly variable depending on the position of the welder and workpiece, the air speed and direction and conditions of confinement. However if adequate ventilation is provided, then the total fume exposure during welding will be significantly less than the 5 mg/m³ ACGIH exposure standard for welding fume. Testing results suggest that other components of the fume and gases would be well below their respective exposure standards in this case.

Chronic Effects Chronic exposure to iron oxide fumes over the standard may lead to Siderosis which is a benign lung condition.
Chronic exposure to manganese fumes over the standard may lead to disorders of the nervous and reproductive systems.
Metal Fume Fever or 'zinc chills' is a self-limiting acute illness. No chronic effects are known.

Health Hazard

Inhalation Dust from cleaning & grinding operations, particulate fume, ozone and other gases from flame cutting and welding may be respiratory irritants but are not normally a problem if exposure is kept to below the standard.
Metal fume fever, 'zinc chills' may result from inhalation of fumes from welding or flame cutting galvanized pipe. Symptoms of zinc chills manifest themselves within 8 hours. They begin with a metallic taste in mouth followed by coughing, chills, weakness, fatigue, and a general malaise/ fever similar to that for influenza.
Complete recovery occurs within about 24 hours. A partial immunity may develop with continuous exposure.

Ingestion Not normally a problem.

Skin Sharp burrs on the edges of steel products can cause lacerations to unprotected skin. Burns may result from contact with hot surfaces.

Material Safety Data Sheet

Page 2 of 3

Infosafe No. 1ST1H Issue Date: August 2001 ISSUED by BHPSTRCT
Product Name: DURAGAL® PROFILES- FLATS, CHANNELS AND ANGLES- USA

Not Classified as Hazardous

Eye Cutting, grinding hand tool cleaning etc. operations may generate (hot) metal particles which are potentially injurious to eye tissue.

Other Information FROM HEAT GENERATED FUME ONLY: With burning or welding, moderate amounts of fume are emitted which contain mostly visible finely divided zinc oxide (ZnO) and iron oxide (Fe₂O₃) fume. Fume flocculates as it ages. Small amounts of ozone and other gases may be emitted.

4. FIRST AID MEASURES

First Aid

Inhalation Remove to fresh air away from further exposure.

Ingestion None.

Skin Wash with soap and water.
For lacerations, clean and dress wound.
For burns, apply copious amounts of cool water.

Eye Wash eyes thoroughly with cold water. Seek medical attention urgently.

First Aid Facilities Not normally needed.

5. FIRE FIGHTING MEASURES

Flash Point None

Flammable Limits Non-flammable

LEL

Unusual Fire & Explosion Hazards None.

Flammability Not normally flammable.

6. ACCIDENTAL RELEASE MEASURES

Spills & Disposal Non-hazardous.

7. HANDLING AND STORAGE

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

Exposure Limits American Conference of Governmental Industrial Hygienists. (ACGIH),2000. Threshold Limit Values.

Welding fume	5 mg/m ³ TWA
Iron Oxide fume	5mg/m ³ TWA
Ozone gas	0.05 ppm TWA, heavy work 0.08 ppm TWA, moderate work 0.1 ppm TWA, light work 0.2 ppm, all workloads, 2 hrs max.
Manganese, inorg cmpds	0.2 mg/m ³ TWA
Zinc oxide fume	5 mg/m ³ TWA 10 mg/m ³ STEL
Chromium:	
Metal and Cr III cmpds	0.5 mg/m ³ TWA
Cr IV cmpds, water sol.	0.05 mg/m ³ TWA
Cr IV cmpds, insol	0.01 mg/m ³ TWA
Fluorides	2.5 mg/m ³ TWA
Carbon Monoxide	25 ppm TWA

TWA= Time Weighted Average
STEL = Short term exposure limit.

Personal Protective Equipment If exposed to fumes from welding or hot cutting of galvanized sections because of poor ventilation, wear a dust filter respirator approved for

Material Safety Data Sheet

Page 3 of 3

Infosafe No.	1ST1H	Issue Date:	August 2001	ISSUED by	BHPSTRCT
Product Name:	DURAGAL® PROFILES- FLATS, CHANNELS AND ANGLES- USA				

Not Classified as Hazardous

welding fume. Continuous welding in confined space should only be done wearing an air-line respirator.

Eng. Controls

Ventilation recommended if welding or flame cutting.
Refer to American Welding Society 'Safety in Welding, Cutting and Allied Processes', (Z49.1-99)

9. PHYSICAL AND CHEMICAL PROPERTIES

Melting Point	1300°C (2372 F) (Steel)
Boiling Point	3000°C (5432 F)
Specific Gravity (H2O=1)	7.85 g/cc (490 lb/ft3) (Steel)
Vapour Pressure	0 torr (0 psi) at 20°C
Appearance	Metal section, flat, channel or angle shapes.
Other Information	Solubility g/L H2O: Insoluble. May fume if heated strongly. i.e. welding, flame cutting, flame cleaning, grinding etc.

10. STABILITY AND REACTIVITY

11. TOXICOLOGICAL INFORMATION

12. ECOLOGICAL INFORMATION

13. DISPOSAL CONSIDERATIONS

14. TRANSPORT INFORMATION

U.N. Number	None Allocated
Proper Shipping Name	None Allocated
DG Class	None Allocated
Hazchem Code	None Allocated
Packaging Method	
Packing Group	None Allocated
Storage and Transport	Non-hazardous.
EPG Number	
IERG Number	

15. REGULATORY INFORMATION

16. OTHER INFORMATION

Poisons Schedule	Not Scheduled
Signature of Preparer/Data Service	Peter Byrne, MRACI, M AusIMM, C. CHEM. Contact Point: Mr. Ron Smejkal PDM Steel Service Centers 3535 E Myrtle Street. Stockton, California 95201 USA. Ph. (209) 943 0555 ...End of Report...