

## AI-1097

### Description and Applications

**AI-1097 is a powder consisting of 99% Titanium Dioxide.**

**AI-1097** is a high-quality ceramic powder, which can be sprayed using both plasma and flame spraying. It produces dense, hard coatings which resist wear by abrasive grains and hard surfaces at temperatures below 538°C. **AI-1097** has more flexibility in the coating than most other ceramics.

**Applications include:** Gland packing areas, pump housing, and bearing sleeves.

### Typical Weldmetal Analysis

Composition	Min	Max
Titanium Dioxide	99.0	
Others		1.0

### Mechanical Properties of Weldmetal

	As Welded
Mesh Size (Typical)	-45 +22 microns
Thickness Recommendations	0.6mm (0.025")
Melting Point	1920°C
Typical Composition	Titanium Dioxide
Texture, as sprayed	7-10 microns Ra

Finish	Ground
100 grit silicon carbide	0.1 - 0.2 microns Ra
Lapped	0.1 microns Ra
Coating Hardness – Macro-hardness	53 HRc (Converted)
Microhardness DPH <sub>300</sub>	650
Density	4.1g/cm <sup>3</sup>
Thickness limitation (Typically)	0.5 - 0.6mm (0.020" - 0.025")
Coating weight	0.40 kg/m <sup>2</sup> /0.1 mm

### Welding Instructions

**AI-1097** is recommended for resistance to wear by abrasive grains and hard surfaces. These coatings can be ground and lapped to very smooth finishes.

Coatings should be applied at moderately slow speed, approximately 1200mm per minute for flat work and approximately 150 SFPM at a traverse rate of 2 feet per minute for cylindrical work. Too slow a speed will cause localized overheating leading to coating failure.



**ALLOYS INTERNATIONAL (A'ASIA) PTY LTD**

25 Raymond Road Laverton North Victoria 3026

Telephone: +61 3 8368 2222

**ABN** 53 112 712 286

[sales@alloysint.com.au](mailto:sales@alloysint.com.au) | [www.alloysint.com.au](http://www.alloysint.com.au)

### Finish

Coatings of **AI-1097** are best finished by grinding. Excellent finishes have been obtained by utilizing 100 grit silicon carbide wheels. Wet grinding is recommended over dry grinding. The surface to be sprayed must be thoroughly cleaned and grit blasted prior to spraying. Preheat from 90°C to 120°C to eliminate the formation of condensate.

### Disclaimer

All figures in this datasheet should be considered indicative only. No guarantee is made as to their accuracy. All figures subject to change without notice. Batch analysis is available for all products sold. Should you require any further information, please contact us at [sales@alloysint.com.au](mailto:sales@alloysint.com.au)



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