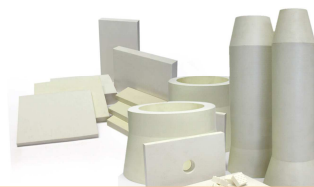




### MSDS : EcoTuf - Zirconia Toughened Alumina Tiles

(MATERIAL SAFETY DATA SHEET)

1. Identification of the substance and the company	Product commercial name:		Dakot EcoTuf Tiles
	Description:		Ceramic tiles
	DMM:		Lambstreet 1, Gingindlovu KwaZulu-Natal, South Africa 3800 Tel: +27 35 337 0062/68 Fax: +27 35 337 0072
2. Composition / information on the ingredients	<b>Component</b>	<b>Weight %</b>	<b>CAS #</b>
	Al <sub>2</sub> O <sub>3</sub> (alumina)	80%	1344-28-1
	ZrO <sub>2</sub> (zirconia)	13%	1302-76-7
	Other	7%	
	Hazardous components	none	
3. Hazards identification	Health rating:		0 - none
	Flammability rating:		0 - none
	Reactivity rating:		0 - none
	Contact rating:		0 - slight
	Possible irritation through abrasive friction.		
4. First aid measures	Eye Contact:	may be abrasive through friction, treat as particle in eye.	
5. Fire fighting measures	This product is not combustible or explosive. It is compatible with all standard fire-fighting methods.		
6. Accidental release measures	None.		
7. Handling and storage	In case of operations where dust could be generated, wear a dust mask. Wear eye protection. It is a heavy material - respect the safety rules in case of stacking. Use safety shoes when handling.		
8. Exposure control / personal protection	Eye protection:	Use safety glasses.	
	Recommended dust concentration limits in air (8 hr working day)	no dust present in product.	
9. Physical /chemical properties	Physical state and appearance:	Solid.	
	Odor:	Odorless.	
	Color:	Cream.	
	Density:	≥ 3.75 g/cm <sup>3</sup>	
	Relative Wear Rates: (Abrasion resistance)	2.5 (0.05) cm <sup>3</sup> .h <sup>-1</sup>	
	Vickers Hardness:	1250 HV - N/mm <sup>2</sup>	
	Fracture Toughness:	4.2 MN.m <sup>-1</sup>	
	Boiling Point:	>2000°C	
	Melting Point:	>1700°C	
	Specific Gravity:	3.60 to 3.90 t/m <sup>3</sup>	
	Volatiles by volume at 21°C:	0 % (nil)	
	Vapor pressure / vapor density:	Not applicable.	
	Solubility:	Insoluble.	
10. Reactivity data:	Stability:	The product is stable.	
	Instability Temperature:	Not available.	
	Flash point:	Non-flammable.	
	Materials to avoid:	N/A	
	Hazardous decomposition products:	Inert.	



	Hazardous polymerization:	Not relevant.
	Special Remarks on Corrosivity:	Not available.
<b>11. Toxicological information</b>	National Toxicology Program (NTP) Carcinogen Classification:	NONE – non carcinogenic.
	Known anticipated International Agency for Research on Cancer (IARC) Category:	Category 4 - no known carcinogenic effect.
<b>12. Ecological information</b>	Environmental Fate:	Inert with no environmental fate consideration.
	Environmental Toxicity:	Non toxic.
<b>13. Disposal consideration</b>	Waste Disposal:	Whatever cannot be saved for recovery or recycling should be managed in an appropriate waste disposal facility. Dispose of packaging and unused contents in accordance with governmental and local requirements.
<b>14. MSDS transport information</b>	Not regulated.	
<b>15. Regulatory information</b>	Non regulated product.	
<b>16. Other information</b>	Updated on 21 October 2016	
DMM Technologies provides the information contained herein in good faith and to its best knowledge but makes no guarantee as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product.		

