

MULGRAIN™ DFS

PRODUCT DATA

Description:

MULGRAIN DFS is produced from high purity calcined kaolin and is available in both 47% and 60% Al₂O₃ contents. A unique process and stringent process controls ensure continuous homogeneous mineralogy. Uniformity and high mullite content provide the thermal stability to assist the foundry man in producing NEAR NET SHAPE castings.

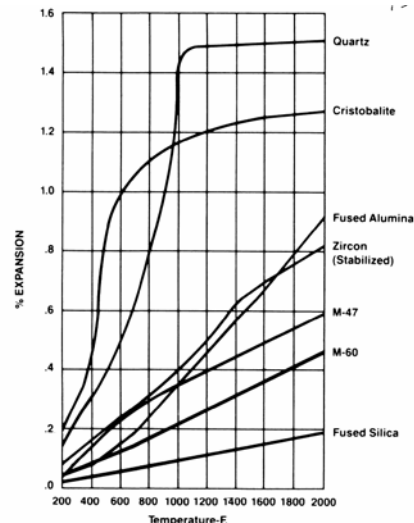
Applications:

MULGRAIN DFS is available in 65 and 105 AFS Sands for use in molds and cores. MULGRAIN FLOURS (200 AND 325 Mesh) are available for washes and coatings.

Special Features:

MULGRAIN DFS has excellent flowability and is readily cleaned from cast metal. MULGRAIN DFS is particularly suited for use with sodium silicate binders giving a relatively inexpensive binder system, which has excellent shake-out characteristics. When compared to zircon sands, MULGRAIN DFS is approximately half the bulk density. This means lighter cores and molds and more cores and molds per pound. The net result is substantially LOWER COSTS.

Thermal Expansion Traces:



Chemical Analysis (%):

	MULCOA 47	MULCOA 60
Al ₂ O ₃	46.8 (46.0 min)	58.6 (58.0 min)
SiO ₂	50.0	37.8
TiO ₂	1.89	2.21
Fe ₂ O ₃	0.95 (1.0 max)	1.13 (1.35 max)
CaO	0.04	0.06
MgO	0.08	0.07
Na ₂ O	0.09	0.07
K ₂ O	0.09	0.04
P ₂ O ₅	0.09	0.10

Physical Properties:

Bulk Density (ASTM C-357, g/cc)	2.62 (2.60 min)	2.78 (2.75 min)
Apparent Porosity, %	3.6	3.2
PCE	35 (3245°F)	37 (3308°F)
2800°F (1540°C) Reheat Change		
B.D. g/cc	2.60	
% Volume	+1.5	
2910°F (1600°C) Reheat Change		
B.D. g/cc		2.80
% Volume		0

Mineralogy:

% Mullite	65	77
% Glass	20	23
% Cristobalite	15	Tr

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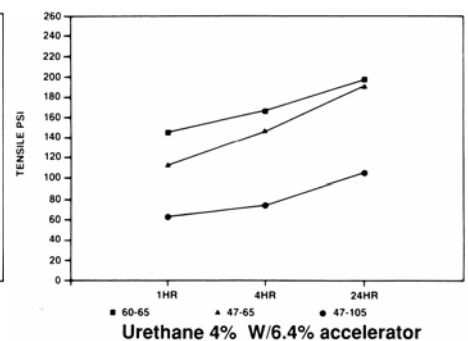
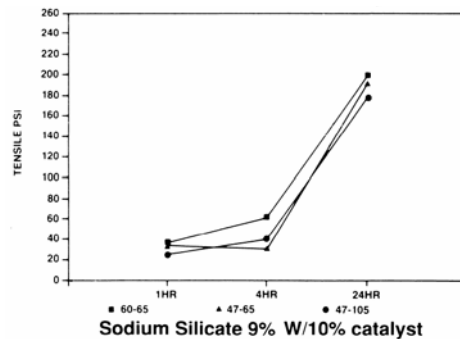
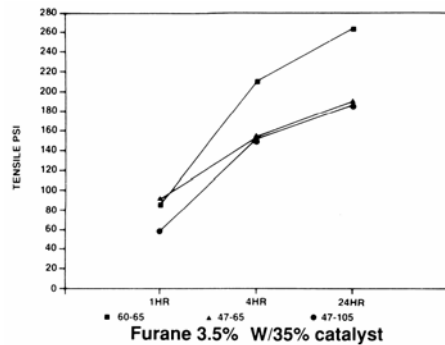
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Grain Size Specifications (% Retained)

USS Sieve Grade	30 600 µm	40 425 µm	50 300 µm	70 212 µm	100 150 µm	140 106 µm	200 75 µm	270 53 µm	PAN*
50 AFS (1, 2)	Tr	3-12	28-47	28-52	3-17		8 max	3 max	3 max
65 AFS (1, 2)		0-5	10-30	25-53	10-35	2-15	0-10	0-3	2 max
105 AFS (1)			0	0-16	36-66	13-42	3-16	0-6	2 max

*PAN designates the percentage of material passing the last reported screen for each size Grade available in Al₂O₃ content (1) 47% (2) 60%

Characteristic Sand Strengths for Indicated Binders



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