

# RANCO-SIL™ FUSED SILICA

Ranco-Sil fused silica is electrically fused, high purity silica. Fused silica is produced from a naturally occurring mineral and is therefore subject to variability. It has a low thermal conductivity and excellent thermal shock resistance. These properties, along with its low density, make it an excellent refractory for use in a ceramic shell mold. Ranco-Sil fused silica is available in both flour and granular forms.



Ranco-Sil fused silica can be used throughout the ceramic shell. When used in the primary slurry, it may be necessary to blend with zircon depending on the alloy. Shells constructed with fused silica hold their dimensions better and are not prone to hot deformation or bulging. Shell removal from the casting, or knockout, is also easier with fused silica refractories.

## Typical Material Properties\*

	Grains	Flours
% Silica (SiO <sub>2</sub> )	≥ 99.7%	≥ 99.7%
Alumina (Al <sub>2</sub> O <sub>3</sub> )	≤ 1200 ppm	≤ 4000 ppm**
Ferric Oxide (Fe <sub>2</sub> O <sub>3</sub> )	≤ 350 ppm	≤ 350 ppm
Sodium Oxide (Na <sub>2</sub> O)	≤ 50 ppm	≤ 50 ppm
Potassium Oxide (K <sub>2</sub> O)	≤ 75 ppm	≤ 75 ppm
Calcium Oxide (CaO)	≤ 100 ppm	≤ 100 ppm
Magnesium Oxide (MgO)	≤ 50 ppm	≤ 100 ppm

\*These results are based on the testing methods, frequency and procedures of Ransom & Randolph or its approved suppliers. The levels referenced herein are only for general guidance and do not constitute a firm specification.

\*\*The finer the powders, the higher the alumina levels, due to the use of high density alumina grinding media.



## RANSOM & RANDOLPH

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## Sieve Analysis (% Retained)

USS Sieve Grade	10 (2.0 mm)	20 (0.85 mm)	30 (0.6 mm)	40 (.425 mm)	50 (0.3 mm)	60 (0.25 mm)	80 (180 µm)	100 (150 µm)	140 (106 µm)	200 (75 µm)	325 (45 µm)	PAN***	Magnetics Max ppm
C -10+30	0-1	80-95	2-16	-	0-4	-	-	-	-	-	-	0-2	25
B -30+50	-	0-0.5	25-35	34-48	16-32	-	0-8	-	-	-	-	0-0.5	25
A -50+100	-	-	-	0-0.5	3-12	-	-	72-87	5-16	0-3	-	0-1.5	25
#2 -120	-	-	0	-	0-0.5	-	-	4-12	7-13	10-15	14-20	45-55	75
#140 -140	-	-	0	-	-	0-1	0-4	0-6	5-10	5-15	17-26	52-59	75
#4 -200	-	-	0	-	-	-	0-0.5	0-0.5	0-4	3-9	13-20	69-81	75
#270 -270	-	-	0	-	-	-	0-0.5	0-0.5	0-2	1-5	8-17	80-86	75
#1 -325	-	-	0	-	-	-	-	Tr	Tr	Tr	0-2	98-100	75

\*\*\*PAN designates the percentage of material passing the last reported screen for each size. Imerys has determined test method and provided analysis as noted herein.

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Issue Date: July 26, 2023

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