



DATA SHEET

Area Code 312 - 773-2350

Hannes Industries Co.
General Offices; Drawer Box C, 1222 Ardmore, Itasca, Illinois 60143

PLAINTIFF'S EXHIBIT

MAR-197

CRYSTALLINE SILICAPHYSICAL COMPOSITION (Average)Percent Through US Sieve

	<u>100/Mesh</u>	<u>140/Mesh</u>	<u>200/Mesh</u>	<u>325/Mesh</u>	<u>400/Mesh</u>
No. 80 SILICA:	99.0	95.0	85.0	67.0	
No. 68 SILICA:		98.0	91.0	73.0	
No. 10 SILICA:			96.0	80.0	
No. 300 SILICA:				96.0	
No. EP 2398 SILICA:				98.0	
No. EP 2400 SILICA:				74.0	98.4

CHEMICAL COMPOSITION (Average)

Silica (SiO ₂)	99.8
Iron Oxide (Fe ₂ O ₃)	.020
Aluminum Oxide (Al ₂ O ₃)	.050
Titanium Dioxide (TiO ₂)	.014
Calcium Oxide (CaO)	.030
Magnesium Oxide (MgO)	.010
Loss on ignition	.070

OIL ABSORPTION (G&C)

No. 80	19.9
No. 68	20.8
No. 10	23.2
No. 300	27.0
EP 2398	29.0
EP 2400	30.1

Issue: April 1971
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000937

HIGH ALLOY POWDERS

Ancor stainless steel and high alloy sintered powders can be compacted at pressures well under 50 psi and sintered in dissociated ammonia at 2050°F - normal production procedures in many P/M facilities. The particle size and shape of the -100 mesh powder provides optimum flow and apparent density for production of uniform P/M parts. The stainless steel powders are within AISI composition limits (except Ancor 303).

Ancor 303 contains 0.2% sulfur to aid machinability.

Ancor 304L is recommended where good strength and corrosion resistance are required.

Ancor 316L is widely used for corrosion resistant P/M parts needing good strength and toughness.

Ancor 410L is recommended for parts requiring high strength and hardness along with corrosion resistance.

Ancor 434 is used for its coefficient of expansion which is similar to glass and for its chrome-like color.

Ancor 50Ni/50Fe is used successfully for many soft electromagnetic applications.

TYPICAL PROPERTIES OF HOGANES IRON AND LOW ALLOY STEEL POWDERS

GRADE	Powder Properties				Compacting Properties		Sintered Properties				
	CS	HF Loss	A.O.	Flow Sec.	Compressibility @ 20 psi***	Green Strength psi (minimum)	Added CS	Added HF	Density g/cm ³	T.R.S. (min)	-1000 psi (min)
Sponge											
Ancor MH-100	.02	.45	2.00	30	0.20	2300	1.0	4	6.4	115"	-
Ancor MH-101	.10	.40	2.45	30	0.25	2300	1.0	4	6.4	140"	-
Ancor MH-102	.02	.45	2.45	30	0.20	2300	0.0	0	6.4	125"	100
Ancor MH-102AL (18)	.02	.45	2.00	30	0.20	1600	-	-	-	-	-
Alumina											
Ancor MH-100B	.015	.17	2.00	30	0.70	1200	1.0	3	-	-	-
Ancor MH-101B	.15	.30	3.00	30	0.80	1000	0.05	3	-	-	-
Ancor MH-102B	.015	.17	3.00	30	0.6	1000	0.0	0	7.0	130"	100
Ancor MH-102BV	.015	.13	3.00	30	0.50	1000	0.0	0	7.0	145"	210
High Alloy											
Ancor 303	.05	-	2.0	30	0.1	400	17.5	10	6.7	125"	-
Ancor 304L	.05 max.	-	2.7	31	0.2	400	16.5	10	6.7	140"	-
Ancor 316L	.05 max.	-	2.7	31	0.3	400	17.5	10	6.8	160"	-
Ancor 410L	.05	-	2.7	31	0.9	400	13.5	-	6.5	170"	-
Ancor 434	.05	-	2.7	37	0.5	300	16.7	-	6.5	135"	-
Ancor 50Ni/50Fe	.05	-	2.0	30	0.3	300	-	00	7.3	110"	-

*Sintered in endothermic atmosphere.

**Sintered in dissociated ammonia.

***Additions 1% zinc stearate in sponge and sintered powders and 1% stearic stearate in high alloy powders.

FORM - WB 181

2M Printed U.S.A. 5/75