Technical Data

FEATURES AND BENEFITS

PORTAFLAME® SG is produced from carefully selected, synthetic aluminium hydroxide (ATH). The standardised quality of PORTAFLAME® SG is guaranteed by means of an ISO 9001 certified quality management plan. The chemical composition of raw material and product is closely monitored and particle size kept within a narrow variation.

Our range of PORTAFLAME® SG micronized halogen-free flame retardant (HFFR) fillers is used in a broad range of applications such as SMC & BMC, wire & cable compounds, resin potting compounds, coatings, sealants and adhesives. Their flame-retarding action is based mainly upon the endothermic decomposition of metal hydroxide (heat-sink effect) and simultaneous release of water vapour. This reaction starts at about 200°C. In addition to flame retardancy, fillers in the PORTAFLAME® SG range posses a strong smoke-suppressing ability.

Development of Halogen Free Flame Retardant (HFFR) products is one of the ongoing high priority areas of the industry. The application of mineral based flame-retardant fillers is one of the options to replace traditional halogenated FR-products that are in the process of new regulatory measures from the authorities. Hot topics are the persistency of halogenated flame-retardants in the environment and the formation of polyhalogenated toxic compounds during thermal degradation of certain halogenated flame-retardants. PORTAFLAME® SG products are utilised as effective and economical flame retardants and/or smoke suppressants. They are not classified as a dangerous substance (DSD and CLP) and do not contain Substances of Very High Concern (SVHC), including their decomposition products from fire.

PARTICLE SIZE ANALYSIS AND PROPERTIES

Mean values. These do not represent a specification

		SG10	**SG 20**	**SG 25**	**SG 40**	**SG 35**	Method
+ 45 µm, %	%	-	-	0.0	-	-	Alpine sieve
+ 45 µm, %	%	-	-	-	-	0.05	Wet sieving
+ 38 µm, %	%	-	0.1	0.15	0.01	-	Alpine sieve
+ 25 µm, %	%	0.01		-	-	-	Wet sieving
+ 20 µm, %	%	-	-	-	-	30	Wet sieving
D_{10}	µm	1	1.2	1.4	1.8	11*	
D_{50}	µm	3.8	5.4	7.3	11.5	16*	Laser diffraction
D_{90}	µm	8.5	14.0	18.2	27.5	29*	
D_{97}	µm	10	18.2	24.0	36.0	-	
SSA	m^2/g	7	5.3	4.1	2.7	-	BET
Colour (D65;10º)	L*	98.4	97.5	97.5	97	96.5	
	a*	0.3	0.4	0.4	0.5	-	CIELAB DIN 6174
	b*	1.0	1.5	1.5	1.9	-	
Moisture	%	0.4	0.5	0.2	0.2	0.3	ISO 787/2
pH		9	9	9	9	9	ISO 787/9
Density	g/cm^3	2.4	2.4	2.4	2.4	2.4	
Apparent density	g/cm^3	0.4	0.5	0.6	0.7	0.7*	AP method (MF-17)
Hardness	Moh's	3	3	3	3	3	
Refractive Index		1.57	1.57	1.57	1.57	1.57	
Thermal stability	ºC	≈ 200	≈ 200	≈ 200	≈ 200	≈ 200	DSC

**These values have been determined via an Internal Method and therefore differ from the Standard Method listed here.*

Technical Data

CHEMICAL ANALYSIS
Mean values. These do not represent a specification

	Weight %	Method
Al_2O_3	65	XRF
Na_2O	0.2	XRF
Fe_2O_3	0.01	XRF
L.O.I	34.5	1000°C, 1 hour

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