



TECHNICAL DATASHEET

HOLLOW GLASS MICROSPHERES (HGM)

Description	Hollow glass microspheres are dispersed bulk powders consisting of individual thin-walled spherical particles with a diameter of up to 200m, obtained by high-temperature heating of ground glass. The composition of the glass and the spherical shape of the microspheres provide high compressive strength, low water absorption, low thermal conductivity, high chemical resistance and radio transparency. Good adhesion of microspheres to polymer binders allows the creation of composites (syntactics) based on them with a unique set of properties.									
Designation	In petroleum industry (the addition of the microspheres to drilling mud intensifies the drilling process and considerably increases the life cycle of the drilling equipment, filling the cement mortars with the HGMs allows to make shrinkage-free heat-insulating quick-hardening material providing a reliable bond of the casing pipes and a shelf); in paint and varnish industry as well as in the production of various sealants and mastics; in the manufacture of explosives (the introduction of HGM into the composition of explosives considerably increases velocity of detonation which improves the efficiency of explosion); in the aerospace, automotive, shipbuilding and construction industries in the production of compounds and lightweight composites based on microspheres.									
Physical and mechanical properties (nominal value)										
Property	Unit of measure	MS-V & MS-V(r)			MS-VP & MS-VP-A9* (* microspheres sizing with γ -aminopropyltriethoxylan)					
Group	-	1L	2L	3L	1L	2L	2	3	4	5
True Density (GOST R 57962-2017)	g/cm ³	0.18-0.22	0.23-0.27	0.28-0.30	0.21-0.25	0.21-0.25	0.26-0.32	0.27-0.31	0.28-0.32	0.37-0.42
Hydrostatic compression strength (10% fracture level), not less (according to GOST R 57963-2017)	kPa (kgs/cm ²)	-	-	-	2942 (30)	4903 (50)	5884 (60)	7845 (80)	11278 (115)	14710 (150)
Volume fill factor, not less (GOST R 57961-2017)	%	-	-	-	55	60	60	60	60	60
Moisture content, no more (GOST R 57964-2017)	%	-	-	-	0.5	0.3	0.3	0.3	0.3	0.3
Buoyancy, volume fraction, not less (GOST R 57961-2017)	%	-	-	-	95	97	97	97	97	97
The content of the sizing AGM-9 or A-1100, (GOST R 57964-2017)	%	-	-	-	0.10-0.35 (for MS-VP-A9)					
Technical documentation	-	TU 6-48-91-92								
Packaging and storage										
Packaging	Microspheres are delivered in plastic bags, laid in cardboard boxes or in laminated plastic bags. Boxes can be installed on pallets. Microspheres may be packaged in other rigid or semi-rigid containers.									
Shipment	It is carried out on pallets or in separate boxes.									
Transportation	By any means of transport in covered vehicles.									
Shell Storage	In packed form in dry enclosed spaces on racks or pallets at a relative humidity of not more than 80%.									
Warranty	1 year from the date of manufacture.									
Health Safety Requirements	According to technical documentation.									

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