



Technical Data Sheet

STMMA (American patent US 6770681B2)

Co-polymer resin beads expandable for lost foam casting

Product Description

The STMMA is an expandable co-polymer resin beads developed for foamed patterns of lost foam casting process, it is copolymerization reacted by liquid methyl methacrylate monomer and styrene monomer. Compare with the EPS, STMMA's carbon molecule content has been greatly reduced in order to eliminate carburization defect in lost foam casting process. This formula co-polymer product was designed for high-quality required valves ,pipe fittings and machinery parts, especially made of gray iron, ductile iron and low carbon steel.

Advantages of STMMA copolymer:

Reducing carbon defect of castings;
Reducing carburization defect on surface of steel castings;
Reducing smoke carbon;
Improving surface finish of castings

Product Characteristics

Chemical components:	Copolymerization of 30%styrene and 70%MMA
Additives	n-Pentane(blowing agent), Organic Bromide,etc
Status	Co-polymer resin for lost foam casting
Test Method used	JB/T11846-2014
Features	low carbon content, low dissolution temperature,less residues.
Appearance	Oyster white Spherical beads
Typical Customer Applications	Gray iron,ductile iron/nodular iron,low carbon steel.

Typical Properties	Method	Value	Unit -
Bead size		SEE BELOW	mm
Content of volatile	JB/T11846-2014	>7.0	%
Content of moisture	JB/T11846-2014	<0.5	%
Temperature of foaming	JB/T11846-2014	95-105	°C

Specifications

Product	Volatile level(pentane by wt.)	Casting carburization	Beads size distribution peak(mm)	Expanded density recommended	Status
STMMA-1#	≥ 7.0%	≤ 0.06%	0.85-0.90	18-20g/L	Stop production
STMMA-2#	≥ 7.0%	≤ 0.06%	0.65-0.85	19-21g/L	available
STMMA-3#(A)	≥ 7.0%	≤ 0.06%	0.50-0.65	20-22g/L	available
STMMA-3#	≥ 7.0%	≤ 0.06%	0.36-0.50	21-23g/L	Export only
STMMA-3#(S)	≥ 7.0%	≤ 0.06%	0.33-0.35	23-26g/L	available
STMMA-4#	≥ 7.0%	≤ 0.06%	0.25-0.33	23-26g/L	available



Safety

STMMA copolymer should not be exposed to ignition sources(including open flame,sparks,or electrostatic charges) during storage,processing,shipment and application.Adequate ventilation in all processing areas must be provided to prevent hazardous accumulations of hydrocarbon vapours.

Package&Shipping

Packed in steel drum: N.W=125kgs/drum,G.W=144kgs/drum. Plastic liners are used to maintain product shelf life by retaining the blowing agent.

It must be transported according to condition of UN2211 and chemical hazard Class 9th.

Storage

Shelf-life: 3-6 months in sealed original package.

STMMA should be put in a chilled warehouse to protect the blowing agent escaping from raw beads quickly. If you don't have this condition,it should be stored in a clean,airtight container,put in a cool dry place,and keep away from direct sunlight or close to alkaline substances,acid ,moisture and other impurities.

When you open the package but not used it up for one time, please make sure to seal the package so that protect the pentane from volatilization.

Pre-expansion

The pre-expansion of STMMA raw beads should be given saturated steam with 95-105℃ temperature under 0.3-0.4 bar pressure, recommended pre-expansion time is 40-60 secs. Expanded bulk density please see to above-mentioned specifications.

Intermediate aging

The recommended aging period for the expanded beads should be above 24 hours, depended on the ambient temperature.

Molding of pattern

See attached Molding Guide.