COLD-BOX Systems
EPOSET

Binder systems for the Epoxy-Acrylic process

Eposet is a two parts binder system consisting of:

- an Epoxy part — epoxy resins diluted with special solvents and hydroperoxide;
- an Epoxy Acrylic part — mix of epoxy and unsaturated acrylic resins in special solvents.

Depending on the quality of sand used the two resins are added in percentages each varying from 0.4% to 0.8% based on sand weight. Curing is achieved by sulphur dioxide vapor. When the vapor flows through the core, the binders instantaneously polymerize.

Reaction mechanism

Epoxy + Acrylic + Hydroperoxide + SO_2 Catalyst

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Epoxy and Acrylic resins polymer

Performance

- free from formaldehyde, phenol, nitrogen and isocyanate;
- excellent strengths;
- long bench life, days versus hours;
- lower sticking and better release;
- excellent flowability of the sand-resin mixture;
- no cleaning needed;
- extremely fast cure;
- good shake out;
- good hot strength;
- excellent surface finish on castings;
- very high productivity;
- possibility to produce very difficult and complex cores;
- impressive reduction of wastes.

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Depending on the specific needs of the foundries, the following grades are available.

Product	Viscosity 25°C (mPa s)	Solvent	System Description
Eposet A/12	300-600	aromatic	A/12-B/12 is a high erosion resistance system. It can sometimes be used without coating. It can reduce need for anti-veining additives. Suggested ratio 1.0:1.0.
Eposet B/12	50-150	aliphatic/aromatic	
Eposet A/3	100-200	aromatic	A/3-B/3 is a system developped for non ferrous alloys. Excellent shake out properties. Suggested ratio 0.7:0.3.
Eposet B/3	20-100	aliphatic	
Eposet AB33	50-150	aliphatic/aromatic	Single resin component developped for high efficiency and cost reduction. It can reduce need for anti-veining additives. Suitable both in ferrous and non ferrous applications. To be used with the activator Eposet HP4060. Suggested ratio 0.8:0.2.

Fig. 1 – Eposet A/12 – Eposet B/12

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