

Alkaline Phenolic resin for the No-Bake Ester process

Alcafen are alkaline-phenolic liquid binders free from furfuryl alcohol and with a nitrogen content of less than 0.6%.

Depending on the quality of the new or reclaimed sand in use, the addition can vary from 1.0% to 1.5% b.o.s. They cure at room temperature with the addition of Ester catalysts. Hardening occurs at room temperature. The system is Sulphur free.

Reaction mechanism

Alcafen Resin + Ester Hardener



Polymerised resin + Alkaline salt, water and alcohol

Hardening of Alcafen binders is completed when the partially polymerised resin comes in contact with the heat of the liquid metal yielding a rigid structure with a very high thermal resistance.

Alcafen resins are very versatile and offer many advantages: no sulphur, very low nitrogen, low odour and smoke on pouring, excellent resistance to erosion and veining, reduction of hot tears and outstanding shake out.

Alcafen binders are recommended for small and medium production of castings in steel, iron, aluminium, bronze and brass.

They perform very well for steel castings with heavy sections: there are several examples of castings with a net weight of more than 100 tons. For steel castings the usage of chromite sand is reduced and the addition of iron oxide is eliminated.

NO-BAKE Systems ALCAFEN

Product	Name	Main features
Resins	Alcafen	Sodium Hydroxide Phenolic resin
	Alcafen 7	Potassium Hydroxide Phenolic resin
Hardeners	Alcadur 6N	High reactivity
	Alcadur 3	Medium - high reactivity
	Alcadur 3C	Very low formaldehyde emissions
	Alcadur 11	Medium reactivity
	Alcadur 12	Low reactivity
	Alcadur 12C	Very low formaldehyde emissions



Fig. 1 – Alcafen – Alcadur 11