

Aluminum's mechanical and physical properties are enhanced with the use of alloying elements. These alloying elements are commonly referred to as hardeners. Aluminum based master alloys which contain the hardener elements in high concentrations, provide a convenient and economical way to add them to aluminum to achieve desired properties. These master alloys readily go into solution at lower liquid aluminum temperatures, thus minimizing dross formation and solubility of hydrogen. Lower furnace temperatures also mean reduced energy consumption and longer furnace life. High concentration aluminum hardeners in the form of compacts remain a popular method for hardener additions. These products are a mixture of hardener elements such as Mn, Cr, Fe, Ti and Cu compacted with high grade aluminum powder. Generally compacts have a slower recovery time and lower recovery rate than that of master alloys as the elements in question are not in solution with aluminum. Many cast-house operations have adopted an economical practice that includes the use of both high concentration compacts and lower concentration hardener alloy(waffle or castcut) to achieve the desired recovery and productivity results.

Aluminum Compacts

Product Name	Composition Limits		Colour	Packaging
	Maximum unless shown as a range		Coding	
75FeF/75FeAl	Fe 74-76%	Mn 0.30 Other Each 0.05	Green	100g/tablet
		Cu 0.15 Total 0.15		500g/tablet
		Cr 0.10 Balance flux or Al		1000g/tablet
80FeF/80FeAl	Fe79-81%	Mn 0.30 Other Each 0.05		1250 g/tablet
		Cu 0.15 Total 0.15		
		Cr 0.10 Balance flux or Al		
75MnF/75MnAl	Mn74-76%	Si 0.30 Other Each 0.05	Minium	500g/tablet
		Fe 0.15 Total 0.15		1000g/tablet
		Cr 0.10 Balance flux or Al		1250 g/tablet
80MnF/80MnAl	Mn79-81%	Si 0.30 Other Each 0.05		
		Fe 0.15 Total 0.15		
		Cr 0.10 Balance flux or Al		
75TiF	Ti74-76%	Si 0.35 Other Each 0.05	Red	100g/tablet
		Fe 0.35 Total 0.15		500g/tablet
		Balance flux or Al		
80TiAl	Ti79-81%	Si 0.35 Other Each 0.05		
		Fe 0.35 Total 0.15		
		Balance flux or Al		
75CrF/75CrAl	Cr74-76%	Si 0.30 Other Each 0.05	Purple	100g/tablet
		Fe 0.50 Total 0.15		500g/tablet
		Mn 0.10 Balance flux or Al		
75CuF/75CuAl	Cu74-76%	Si 0.30 Other Each 0.05	Orange	100g/tablet
		Fe 0.50 Total 0.15		500g/tablet
		Mn 0.10 Balance flux or Al		
AlCu50	Cu48-52%	Si 0.30 Other Each 0.05		20Kg/cart
		Fe 0.30 Total 0.15		

湖南汉润材料发展有限公司

长沙

上海

Hunan Heaven Materials Development Co.,Ltd.

HX707 ,108# Laodong Road West Changsha,Hunan,China

Tel: 0086 731 8551 8261

Fax: 0086 731 8551 8167

R602,4#,89Nong, Mudan Road Pudong Shanghai, China

Tel: 0086 21 6845 1592

Fax: 0086 21 6845 0923

URL : www.heavenmaterial.com

Email: welding@tatichem.com

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