







## Aluminum Grain Refiners

Close control of the cast structure is a major requirement in the production of high quality aluminum alloy products. The most effective way to provide a fine and uniform as-cast grain structure is to add nucleating agents to the melt to control crystal formation during solidification.

Master alloys with a number of different titanium-to-boron or titanium-to-carbon ratios are available to accommodate special conditions which may exist in the user's plant. In selecting the proper grain refiner alloy, the user must take into consideration conditions such as the alloy to be treated, the quantity of recycle or secondary aluminum used, the desired grain size in the product, and the melting and casting practice used. Technical brochures as well as trained sales engineers in your area are available through KBAloys to help you in your decision process.

### TICAR® Titanium Carbon Aluminum

Alloy	Composition Limits				Aluminum Association Color Coding	Form
	Maximum unless shown as a range					
3% Ti .15% C	Ti	2.6-3.4	Si	0.3	 1 red / 1 purple	Rod
	C	.08-.22	Fe	0.3		
			B	0.004		
3% Ti .3% C	Ti	2.6-3.4	Si	0.3	 1 red / 1 orange	Rod
	C	.25-.35	Fe	0.3		
			V	0.3		
			B	0.004		
5% Ti .18% C	Ti	4.5-5.5	Si	0.3	 1 red / 1 brown	Rod
	C	.13-.23	Fe	0.35		
			B	0.004		
			V	0.3		
6% Ti .04% C	Ti	5.5-6.5	Si	0.3	 1 red / 1 white	Rod
	B	0.03-0.05	Fe	0.35		
			B	0.004		