

## GRAIN REFINING TABLETS FOR ALUMINIUM AND ITS ALLOYS VERY EFFECTIVE AND EASY TO USE

Aluminium and its alloys solidify with a coarse structure in the thick sections. This can bring about short self-feeding, shrinkage defects, low mechanical characteristics and pressure tightness, in the production of castings, difficulties during the forging or plastic working of billets and plates, and bad response to anodisation. To obviate these inconveniences, it is a widespread practice to introduce into the liquid metal small quantities of certain elements capable to form, between them and/or with aluminium, crystallization nuclei that favour the formation of a fine and uniform structure.

To realize the maximum result, the grain refining treatment is carried preferably after the degassing operation. The order of the operations is sometimes inverted to avoid any risk of introducing gas into the metal together with the grain refiner. This may happen in case the tablets, which are hygroscopic, have absorbed some humidity, for example during bad storing.

| PRODUCT                    | COLOUR | APPEARANCE | GRAIN REFINING ELEMENTS | APPLICATION RATE % | PLUNGING           | NOTES                                                                                                       |
|----------------------------|--------|------------|-------------------------|--------------------|--------------------|-------------------------------------------------------------------------------------------------------------|
| <i>ITALFINAR LS12</i>      | Grey   | Tablets    | Ti+B                    | 0.10 - 0.50        | Perforated plunger | Al and all alloys. Does not contain hexachloroethane.                                                       |
| <i>ITALFINAR B</i>         | White  | Tablets    | Ti+B                    | 0.10 - 0.25        | Perforated plunger | Al and all alloys. Contains hexachloroethane.                                                               |
| <i>ITALFINAR B/4</i>       | Grey   | Tablets    | B                       | 0.10 - 0.25        | Perforated plunger | For high conductivity Al and alloys already containing Ti $\geq 0,15\%$ .                                   |
| <i>ITALFINARSIL/G ECO</i>  | Brown  | Tablets    | P                       | 0.10 - 0.20        | Self-sinking       | For secondary smelters: suppresses interference of traces of Ca on Na modification. Introduces metallic Fe. |
| <i>ITALFINAR IPER BZ/4</i> | Grey   | Tablets    | P                       | 0.25 - 0.30        | Self-sinking       | For hypereutectic Al/Si alloys. Contains Cu/P.                                                              |

Others products are available for particular situations.

PROTECME can produce new product able to satisfy the specific requirements of foundries.