PROMAG®

INJECTION-GRADE TREATMENT SALT FOR ALUMINIUM CASTHOUSES

Pyrotek Promag® Fused Refining Agents are eutectic salts composed of anhydrous magnesium chloride ($MgCl_2$) and sodium chloride (NaCl) or potassium chloride (KCl).

Pyrotek Promag is used to remove alkali metals (sodium, calcium and lithium) and nonmetallic inclusions (oxides, borides and carbides) from liquid aluminium and aluminium alloys. The agents can reduce sodium levels during treatment to less than one part per million, even in high-magnesium aluminium alloys.

Pyrotek Promag enhances degassing, reduces non-metallic inclusions, keeps furnaces clean and reduces wall buildup. The agents improve extrusion speed, die life, rolling ingot edge quality and continuous casting efficiency.

BENEFITS

- Replaces chlorine gas injection for in-line and furnace metal treatment systems
- Nominal injection grain sizes
- Fluoride free and non-hazardous
- Low melting point for rapid dispersion
- Less hygroscopic than magnesium chloride powders
- Low application rates
- Reduces dross buildup on furnaces, launders and tools

AVAILABILITY

- Standard 5 kg (11 lb) polyethylene bags
- 1000 kg (2205 lb) per pallet
- Other bag sizes are available upon request

STORAGE

- Promag should be stored in a cool, dry place away from any moisture
- Packaging should be kept in good condition without tears, rips, or other mechanical damage
- Promag should be inspected before use to ensure there are no signs of moisture, which can include clumping or sticking together of Promag inside the bag or a wet/mushy appearance
- Even with proper storage, it is recommended that Promag is used within 2 years of its production date
- If there is any doubt about the condition of Promag, please contact a Pyrotek sales engineer for instructions on how to properly inspect the product before use

Note: Pyrotek holds no liability for products used without proper inspection.

USE INSTRUCTIONS

The exact application requirements depend on the initial and targeted levels of inclusions, sodium, lithium and calcium. Specific application rates and techniques should be considered on a case-by-case basis.

However, the following can be used as general guidelines, or in intial trials before further optimizing a given process:

- For Rotary Injection: 0.3-0.5 kg / tonne (0.5-1.0 lb/ton)
- For Lance Injection: 0.5-1.0 kg / tonne (1.0-2.0 lb/ton)
- For Manual Addition: 1.0 kg / tonne (2.0 lb/ton)

Using rotary injectors or circulation pumps to distribute Promag into molten aluminium provides the highest refining efficiency. Lance injectors are the next most efficient, and bag addition has the lowest efficiency.

HEALTH AND SAFETY

Prior to use, refer to the product safety datasheet for proper handling and the required personal protective equipment.

WARNING: Pyrotek Promag is hygroscopic! Never leave this product in an open bag or in an injection machine hopper for an extended time. Explosions can result from absorbed moisture.

PATENT

www.pyrotek.com/patents

Pyrotek®

PROMAG®

TYPICAL PROPERTIES

Property	Value		
Refining Agent	Promag RI	Promag NI*	Promag SI
Appearance	White and grey granules		
Sieve Specification	Maximum 1% retained 3.15 mm (0.12 in) sieve Maximum 5% passing 0.85 mm (0.03 in) sieve		
Standard Chemistry	43% $MgCl_2$ Minimum 57% KCl Maximum	55% $MgCl_2$ Minimum 45% NaCl Maximum	60% $MgCl_2$ Minimum 40% KCl Maximum
Major Phases	K_2MgCl_4 $K_3Mg_2Cl_7$	$NaMgCl_3$ Na_2MgCl_4	$KMgCl_3$
Melting Temperature	432 ± 10°C (810 ± 18°F)	439 ± 10°C (822 ± 18°F)	483 ± 10°C (901 ± 18°F)
Maximum Impurities	Magnesium Oxide 1.0% Moisture 1.0% Sodium 1.0%**	Magnesium Oxide 1.0% Moisture 1.0%	Magnesium Oxide 1.0% Moisture 1.0% Sodium 1.0%**

** Visit www.pyrotek.com/patents for patent information regarding Promag NI.*

*** In form of stable NaCl and not free sodium, when present.*

Note: The physical and chemical properties listed represent typical, average values obtained in accordance with accepted test methods and are subject to normal manufacturing variations. They are supplied as a technical service and are subject to change without notice.

MAY-23-EN-943

Product Type: 156
Commodity Code: 07016, 07017, 07019