



# TECHNICAL DATA SHEET

## GRODAL STAR CAST

### Cutting and grinding fluid concentrate

Grodal Start Cast is a semi-synthetic coolant designed for machining and grinding of ferrous metals, specially cast iron. It easily emulsifies with water giving a clear emulsion with DI water or a hazy emulsion with hard water.

Grodal Start Cast contains 5% of mineral oil. This small amount of oil improves lubricity and anti-rust properties. The residual film on machines is not tacky. The product is biostable and it does not contain any biocide. It does not contain any nitrite, chromate, phosphate, phenol derivatives, heavy metals nor PTBB acid derivatives. The emulsions are stable and highly resistant to deterioration by microorganisms. Foaming is low and rejection of tramp oil is good, thus tramp oil can be removed with conventional equipment (oil skimmers).

#### Application guidelines

Grinding : from 2% to 5%  
Machining : from 3% to 10%  
Working concentration depends on

- Severity of the operation : harder materials or heavy-duty operations will require a higher concentration in order to improve the lubricity. Concentration must be kept lower than 10%.
- Water quality : hard water or water containing chlorides requires a higher concentration to assure the rust protection. We recommend using water with hardness less than 300gm/lit. as CaCO<sub>3</sub> and ion chloride content less than 100 mg/lit.

To prepare the emulsions of Grodal Start Cast the concentrate must be added upon the water, while stirring, **never the reverse way**. A water driven positive displacement proportioner can be used to dispense coolant on demand at the desired concentration.

The product has been designed to avoid any aggressive action on the skin, nevertheless some individuals specially sensible can show symptoms of skin irritation; we recommend to use gloves when handling parts wet with the emulsion and to avoid the contact with the fluid during long time.

#### Typical Characteristics :

Appearance : Yellowish clear fluid  
Specific gravity : 0.99  
pH at 5% : 9.3  
Anti-rust protection (DIN 51360) : No rust  
Test Herbert : 0/0-0 no rust  
Stability of emulsion at 5% by centrifuging  
a) 10 min. at 2500 rpm : No separation  
b) 12 h. later : No separation

**Note :** The concentrate must be stocked at temperatures above 0°C.

Concentration of working emulsions can be checked by reading a hand refractometer previously calibrated with four standard emulsions at different concentration, for instance at 2%, 4%, 6% and 8%

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1

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