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## *Technical Information*

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### **RENITE D-5-P** **WARM FORMING CONCENTRATE**

**Renite D-5-P** is a graphite-free water-soluble, water-dilutable concentrate for spray lubrication of warm and high temperature dies. Renite D-5-P is a soluble oil, developed to be diluted with tap water.

- Composition:** Blend of select oils and biodegradable emulsifiers.  
**Appearance:** Brownish-yellow, light oil. Product disperses when stirred into water to form a milky, white emulsion.  
**Specific Gravity:** ca. 0.92 (g/mL)  
**Flash Point:** 304°F (151°C) Minimum; 375°F (191°C) Typical.

#### **USES:**

**Renite D-5-P**, diluted with water, provides lubrication and cooling in warm and higher temperature forming of metals. A similar product, our Renite D-5-A, was developed for lower temperature applications such as cutting, drilling, bending, and stamping. Renite D-5-P has been designed for higher temperature forming applications. It has additives for added lubrication at temperatures of about 250°C (480°F) and higher. Undiluted, it is as stable as an ordinary machine oil and may be stored and handled as such. Diluted material has good stability, and neither it nor the concentrate will gum up in cold weather, unlike typical soluble lard oils sometimes used for this purpose.

#### **APPLICATION:**

To dilute, add water and stir, or, for quicker dilution and a more stable emulsion, stir thoroughly with up to 4 parts of water, then add the mixture to the reservoir tank and pump in any remaining water required for the desired dilution ratio. Water may be hot, cold, hard, or soft. However, if mineral content of the water is high, so that mineral residue is a problem, consider use of softened, demineralized, or rain water. A proportioning pump may be used for mixing if desired. (Renite can provide information on suppliers of such equipment.) The optimum dilution ratio should be determined by experiment. Typical dilution ratio is roughly from 2:1 to 5:1 (water : concentrate) when the product is used as an oil-in-water emulsion (oil droplets suspended in water).

For some operations, a thick, creamy, almost paste-like emulsion of the water-in-oil type is preferred. To make such an emulsion, add water slowly to Renite D-5-P. The mixture will thicken. Thickening continues until the inversion point is reached, at which point the emulsion changes over to an oil-in-water type and becomes thinner. This inversion takes place at about a 1:1 ratio of Renite D-5-P to water, and by stopping addition at the proper time (which gets easier with a little practice), the desired thick mixture will be obtained.

The means of application depends upon the job. The lubricant is sometimes squirted or sprayed onto mandrels or other tools, and if a thick mixture is made, it may be used as a billet dip. Agitation of diluted material usually is not needed in smaller reservoir tanks, but a little mild agitation may be helpful in larger ones. To prevent rancidity in reservoir tanks, run until nearly empty before mixing up fresh material, and occasionally add calcium hypochlorite, or rinse and flush with water containing it in a proportion such as would be used to disinfect a swimming pool, following the directions supplied with the hypochlorite.

For application, we recommend the all metal Renite E Model Atomizers, which deliver a very fine, precisely controlled spray. Also effective for this purpose are the Renite G-20 Atomizer and Renite GL Atomizer.

Please contact Renite for further information or for samples provided on a no-charge basis.