

# Polihim Research and Production Enterprise (OOO)

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## POLITREN SV

### COOLING LUBRICANT

#### DESCRIPTION

**Politren SV-2** is a smokeless water-graphite cooling lubricant;

- used for lubrication of mandrels used for the hot rolling of steel pipes; it removes mill scale;
- can be used for hot forging of steels;
- and is supplied as a concentrate to be diluted with tap water;

#### PHYSICAL AND CHEMICAL PROPERTIES

Parameter	POLITREN SV
Appearance	Black thickened liquid
Dry residue, %	20-40
Ash content, %, not more than	4
Water solution pH	8.5÷12.5
Relative viscosity @20C, in accordance with B3-246, S	20÷180
Effective viscosity @20C, Pa-s	0.1÷2.5

#### PERFORMANCE CHARACTERISTICS

- when applied to a tool surface, the product forms a dry grease layer with good adhesion properties;
- reduces friction;
- separates the workpiece and the tool surfaces from each other and reduces the one-piece male punch and mandrel extraction force;
- increases the durability of the mandrel;
- when being used on a Pilger mill, the inner surface of the pipe comes out smooth, without small shells; there are no imprints of minor defects of the mandrel, and there are no rough, flaky scales;
- does not corrode tools or machine parts;
- does not emit smoke or toxic fumes, does not burn;
- does not cause harmful health effects.

## USE

Politren SV:

- supplied as a concentrate, to be diluted with water before use if necessary.
- easily diluted with water (for mixing with water it is recommended to use a machine with a stirrer).
- Mixing shall be carried out to a homogeneous state and a viscosity of 20-180 St. The viscosity can be adjusted by adding water or the concentrate;

### **Applying lubricant to the surface of the one-piece male punch and mandrel**

Ready-to-use aqueous suspension (concentrate) Politren SV is recommended to be apply to heated (mainly 90-120°C) tools (chrome or non-chrome one-piece male punch and mandrel) by spraying under high pressure (20-150 bar) using special nozzles and spraying system; it is possible to apply the product with a brush, roller, cup-type seal, or by dipping or pulling the tools in a pallet with grease.

The time between application of the lubricant to the tool and the start of the rolling process should be sufficient to allow the lubricant to dry but not to dry out. The lubricant layer thickness on the tool is 0.1-0.3 mm.

## SAFETY REQUIREMENTS, TOXICOLOGICAL PROPERTIES AND ENVIRONMENTAL PROTECTION

Politren SV cooling lubricant is a non-flammable liquid.

In terms of its toxicological properties, in accordance with GOST 12.1.007-76 the product is classified in the lowest hazard class IV (low hazard chemical compounds).

Graphite is the most toxic pollutant which can be found in the working area environment.

Politren SV maximum permissible concentration (MPCa) in the working area environment determined for graphite aerosol is 0.4 mg/m<sup>3</sup>.

Politren S liquid does not irritate the skin, or mucous membranes of the eyes, and it has no sensitization properties.

The premises where Politren S is used shall be equipped with continuously operating supply and exhaust mechanical ventilation.

When preparing working solutions, the requirements of "Sanitary rules for working with cooling lubricants and tool lubrication", No. 3935-85 dated 09.29.1985, shall be complied with.

Within the production facilities the air shall be monitored subject to the shop-floor air monitoring schedule agreed with the local public health authorities.

For the disposal of waste cooling lubricant, the maximum permissible norms for the most toxic component should be referred to. Politren SV maximum permissible concentration in water bodies (MPCw) determined for the most toxic, water-insoluble component – graphite – is 10 mg/l, for the most water-soluble component – surface-active substance – is 0.5 mg/l.