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POLITREN V-2

COOLING LUBRICANT

DESCRIPTION

Politren V-2 is a water-graphite cooling lubricant;

- it is applied to forming tools (die blocks) when performing hot deformation of steels and alloys on presses, hammers and automatic lines;
- it has extremely high separating and anti-wear properties;
- it is a cost-effective product which can be used with presses and hammers in stamping (forging) processes in accordance with the configuration and type of manufactured parts; it is also effective for stamping large parts such as crankshafts, front beams of cars, connecting rods, hot and semi-hot upsetting of pipes;
- and is supplied as a concentrate to be diluted with tap water;

PHYSICAL AND CHEMICAL PROPERTIES

Parameter	POLITREN V-2
Appearance	black homogeneous liquid
Ash content, %, not more than	7
Mass fraction of non-volatile residue, %, not less	31
Effective viscosity, not less than	0.05 Pa-s
pH	7.5÷10.5
Sedimentation stability, %, not less than	50
Diluter	tap water
Storage life, not less than	1 year
Container (package) material	polyethylene, steel
Smoke emission	None
Fire resistance	non-flammable

PERFORMANCE CHARACTERISTICS

- when applied to a hot tool surface by spraying, the product forms a dry grease layer with good adhesion properties;
- reduces friction, resulting in reduced metal deformation force;
- separates the forging blank and tool surfaces from each other and ensures trouble-free removal of forging blanks;
- prevents the occurrence of defects on the workpiece, contributes to a good filling of molds, improves quality of forged piece surfaces;
- reduces the rate of defective parts;
- increases the resistance of forging dies;
- reduces overheating of individual parts of forging dies;
- does not corrode tools or machine parts;

- does not emit smoke or toxic fumes, does not burn;
- does not cause harmful health effects.

USE

Polytren V-2:

- supplied as a concentrate, to be diluted with water before use.
- easily diluted with water (for mixing with water it is recommended to use a machine with a stirrer).
- the recommended concentration of the product represents a cost-effective lubricant for forging dies; optimal dilution rate is determined empirically directly at the work site; dilution rate depends on the configuration, weight and material of the forged pieces; forging duration, deforming operation; required cooling effect;
- during storage, minor sedimentation of the lubricant is possible, which does not affect its performance properties. In this case, the lubricant must be stirred before use.

Indicative data for dilution:

Complex forgings or difficult deforming operations - 6÷15 parts by weight of water to 1 part by weight of the coolant.

Forging of medium complexity – 15÷30 parts of water per 1 part of cooling lubricant. Simple forging – 30÷50 parts of water per 1 part of cooling lubricant.

Approximate consumption of cooling lubricant concentrate is 3-5 kg per 1 ton of processed metal.

Application of the product to the forming tools:

It is recommended to apply a ready-to-use, water-diluted Polytren B-2 mixture to a heated forming tool by spraying at an air pressure of 4-5 atm.

SAFETY REQUIREMENTS, TOXICOLOGICAL PROPERTIES AND ENVIRONMENTAL PROTECTION

Politren V-2 cooling lubricant is a non-flammable liquid.

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

Politren V-2 maximum permissible concentration in the working area air (MPCa) determined for ammonia is 20 mg/m³, for graphite aerosol – 0.4 mg/m³.

Politren V-2 liquid does not irritate the skin, or the mucous membranes of the eyes and has no sensitization properties.

The premises where Politren V-2 is used shall be equipped with continuously operating supply and exhaust mechanical ventilation.

When using Politren V-2 the equipment shall be furnished with local suction units.

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 for the graphite aerosol and ammonia content subject to the shop-floor air monitoring schedule agreed with the local public health authorities.

For the disposal of waste cooling lubricant, maximum permissible norms for the most toxic component should be referred to. The Politren V-2 maximum allowable concentration in water bodies (MACw), determined for the most toxic water-insoluble component - graphite - is 10 mg/l; for the most toxic water-soluble component - triethanolamine - is 1.4 mg/l; Politren V-2 maximum concentration determined for the triethanolamine content, supplied for bio-treatment (MCB), is 5 mg/l.