

Cleaning “cold” saves energy costs

In times of exploding energy prices, parts cleaners that can be operated "cold" - i.e. between 20 and 40°C - are becoming an effective energy-saving factor in the process chain. A corresponding solution for intermediate and final cleaning has been successfully established in the automotive and supplier industry.

Launched as a new product in 2015, the cold sprayable and high-pressure parts cleaner Hakupur A 934 for intermediate and final cleaning processes has been used successfully in many applications and is in greater demand than ever before. The formulation is up-to-date - free of boron, monoethanolamine and biocides as well as hazardous label-free. This results in high user safety and operator protection. The surfactant structure used in the cleaner also ensures that it operates with low foaming even at pressures above 100 bar.

Strong in engine and gearbox manufacturing

The cleaner is designed primarily for workpieces made of aluminum, steel and cast iron. This makes it the ideal medium for use in engine and transmission manufacturing. For example, it is used by a well-known German automobile manufacturer for cleaning aluminum cylinder crankcases in two central systems with a volume of 60m³ each and nine individually filled systems. The central systems each supply several spraying units, which operate at a working concentration of between 2 and 4% in the low- and high-pressure range. The parts to be cleaned are made of different aluminum alloys, some with a high silicon content. Alkaline cleaning solutions can easily attack these alloys, causing them to darken in color. However, these discolorations are not only a visual problem. They also lead to errors in optical surface recognition systems

and thus to rework or rejects - and this with continuously increasing cleanliness requirements, especially in electromobility. This phenomenon occurs particularly at higher cleaning temperatures from around 60°C and/or longer exposure times of more than 15min, for example as a result of a plant shutdown, whereby the components remain in contact with the cleaning solution or stand in the steam room above the baths.

High cleaning performance

Hakupur A 934 also demonstrates its bandwidth at a well-known automotive supplier in northern Germany. At this company, the cleaner is used in spraying systems at room temperature, i.e., between 20 and 30°C. Under these conditions, which are optimal for bacterial growth, the cleaner remains biostable throughout the entire bath life. A little trick helps: once a week, on Fridays at the end of the last shift, the temperature is briefly raised to 60°C for 30min. As a preventive measure, this reliably counteracts any bacterial growth. Bevel gears, pinions and other drive elements made of steel and stainless steel are primarily cleaned. The high cleaning performance is particularly noticeable in use, with which a wide range of contaminants - water-miscible cooling lubricants and machining oils - are removed from the components without leaving residues and in a process-safe manner, and consistently high cleanliness values are achieved. A very good corrosion protection on steel (corrosion degree 0 according to DIN 51360, part 2 from 2%) is



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Energy costs can be noticeably reduced with cleaners that ensure parts are as clean as needed at room temperature.



The label-free cleaner does not contain boron, monoethanolamine or biocides. This results in high user safety and operator protection.

obligatory. Due to the so-called self-cleaning effect and the demulsifying properties of the cleaner, no residues build up in the equipment. They are discharged with the cleaner or removed from the bath surface with a skimmer or other bath care equipment. Since tramp oils are demulsified, the dirt-carrying capacity of the cleaner solution is exhausted less quickly. The result is longer bath service life, lower fresh water consumption and less wastewater.

High operational reliability and savings

Reducing the operating temperature from 60°C to room temperature (20 to 30°C) while increasing the bath service life from four weeks to six weeks has resulted in significant savings in process costs. In addition, the high-pressure pumps are protected. This is because the cleaner also contains non-ferrous metal inhibitors, so that when used as intended, no brass inserts frequently used in high-pressure pumps are being attacked. The stabilizers contained in the product prevent lime precipitation, even when hard water is used. //

Contact

Chemische Werke Kluthe GmbH
Heidelberg, Germany

info@kluthe.com
www.kluthe.com