

Degreasers

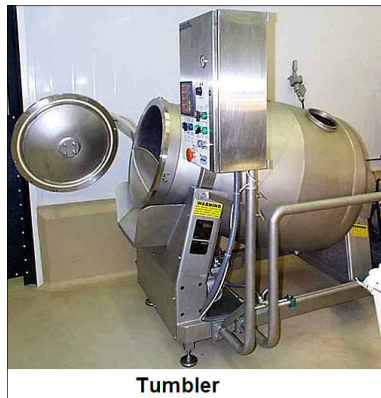
Volume I, Issue I

OTHERS :

Stamping Oils

Phosphating Agent

In Metal stamping industries, oil and grease are used to protect tooling and to speed up production. These lubricants have to be removed before it can proceed to the next stage of surface treatment. The removal of oil and grease are termed degreasing. In a nutshell, all degreasers are classified into Polar and Non-polar degreasers. Polar degreasers are surfactants which have HLB (Hydrophilic Lipophilic Balance) values of between 8 to 15. The higher the HLB value, the better the affinity to mix with water and therefore the better its detergency. All surfactants degreasers form emulsion when cleaning oil. Polar degreasers are water miscible



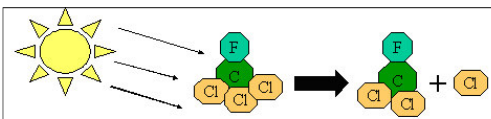
Tumbler

and require a tumbler to perform the cleaning. After the oil removal, the substrate

needs to be rinsed with abundant water. The process generates a lot of spent water which has to be properly treated before it can be discharged. Polar degreasing factories thus have to invest on expensive wastewater treatment plant before they can be approved for operations. They resort to other ways of degreasing.

Non-polar or solvent cleaning on the other hand does not need water to operate. It works on the principle of dissolutions. All solvents, whether hydrocarbons, alcohols, ketones, fatty acids or CFC have the capability to dissolve oil. Single stage solvent cleaning is less than

optimum, as there can be residual oil. Multiple stage serial solvent cleaning is pre-requisite to good oil degreasing. Oil stains can be removed more effectively with the help of an ultrasound equipment by sonic vibrations. For more thorough cleaning, Vaporized solvents to remove remnant oil are mandatory. With the exception of chlorinated and fluorinated hydrocarbons, all other solvents are flam-



UV rays strike CFC molecules, causing a Cl to break away



Lone Cl strikes ozone, leaving chlorine monoxide & oxygen molecule, which results in a loss of ozone

mable; thus solvent cleanings are plagued with fire-hazards. CFC's though are excellent oil cleaners and non-flammable, they have short-falls too. They are not environmental friendly as they can destroy the protective ozone layer of our stratosphere. Their usage in degreasing is now curtailed by most governments. New hydrocarbon degreasers are being developed however their efficacy is only a fraction of the formidable CFC, and they are flammable too.

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