Technical Bulletin

Number: 2006/07 April 2006

DEGREASERS BASED ON WATER

In the previous Technical Bulletin the hydrocarbon (solvent) based degreasers were discussed. As said, these degreasers have been replaced by water based degreasers for a substantial part. This Technical Bulletin will therefore give some more information about these water based degreasers.

Vecom has three types of water based degreasers:

Solid degreasers
After mixing with water (solubilization), a water based degreaser is formed.

Solvent-free degreasers
These consist of surface active components, water, often chelating agents (bind the hardness salts in water) and some times alkalines and corrosion inhibitors enabling the use on aluminium.

Degreaser which contain water soluble solvents
These consist of surface active components, water, often chelating agents (bind the hardness salts in water) and some times alkalines and corrosion inhibitors enabling the use on aluminium. Plus water soluble solvents like glycol ethers.

DEFINITIONS

Surface active components
These are agents that form a bridge between oil/fat and water. Other names are:
- Tensioactive component
- Surfactant
- Wash-active agent
- Soap
- Detergent

pH – value
The pH is a number between 0 and 14 and gives an indication whether something is acidic, neutral or alkaline. See the picture below.

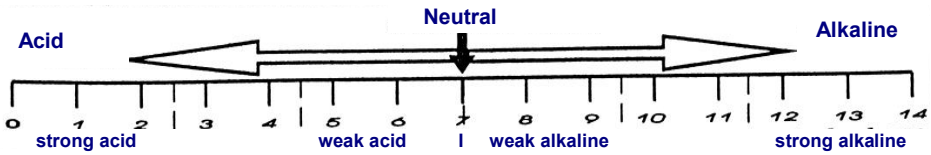
Hydroxide
Hydroxide is an alkaline agent that increases the pH value. Vecom degreasers use a.o. both sodium hydroxide (NaOH) as well as potassium hydroxide (KOH). In some degreasers we use amines to increase the pH.
As a general rule, a higher hydroxide amount (higher pH) means a better and faster cleaning job.

Watersoluble solvents
At Vecom, these mostly are glycol ethers. This are solvents that are very good water soluble (this in contradiction to hydrocarbon solvents, which are used in our solvent based degreasers) and have a high degreasing (solvency) power.

Corrosion inhibitor for aluminium
Aluminium is a weak material (easily corroded) that is affected by (dissolves) both acids and alkalines. By adding a so called corrosion inhibitor you can prevent aluminium from being dissolved in alkaline solutions.

Temperature
With every increase of the temperature with 10 °C, a cleaning job speeds up 2 – 3 times.
For the removal of fats there is a general rule that you need to clean at temperatures above the melting point.

Pressure- and concentration raise
They both shorten the cleaning time.



pH-value
Photo above: high pressure flushing of scaffolding material; small photo: the same material before degreasing

Scaffolding material before and after degreasing

Powder products

Product	pH 1 %	Hydroxide %	Detergents %	Solvent %	Aluminium corrosion inhibitor
Alkaline B-2A / B-2 Extra	13.0	35	5		
Alkaline HD Powder / B-2	13.3	49	2		

Solvent-free products

Product	pH 1 %	Hydroxide %	Detergents %	Solvent %	Aluminium corrosion inhibitor
Multi Cleaner / TP – 02	9.0	0	12		
Veclean Blauw / Blue	10.5	0	10		
Steamclean HPC-NF	11.3	2	4		yes
Veclean HPC	11.7	2	7		
Ultrasonic Multi Cleaner	11.5	8	2		yes
WB Alkaline HD / B-2 Liquid	12.7	30	1		
Tankclean NF	11.4	2	3		yes

Solvent-containing products

Product	pH 1 %	Hydroxide %	Detergents %	Solvent %	Aluminium corrosion inhibitor
Veclean Enviro OSD	7.0	0	7	3	
Floorcleaner Low Foam	11.8	2.5	1	2	
WB Neutral HCF / B-4	7.0	0	10	20	
C-Clean ECO	9.8	0	21	77	
Veclean General Purpose HD	9.9	0	17	14	
WB Alkaline Foam	11.5	3	5	4	yes
Waterbased Alkaline / B –3	12.5	7	2	9	
Veclean LowCOD	8.0	0	22	78	

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