Technical Bulletin

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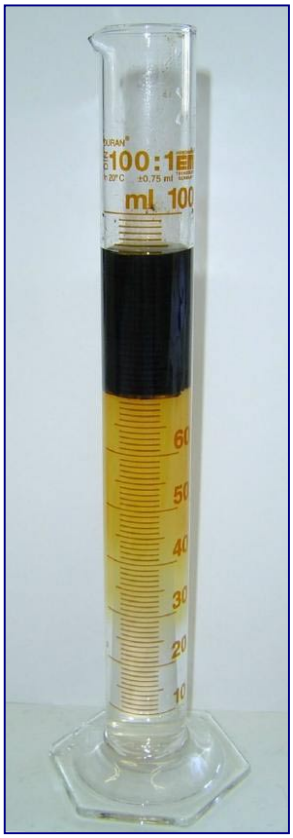
VECLEAN LowCOD

Vecom is happy to introduce the product Veclean LowCOD. This is a very powerful cleaning product based on natural raw materials, emulsifiers and special surface-active substances. The product has been specially developed for removing heavy oils and greases, black tar, bitumen, distillation residues and many other contaminants. Due to its special composition, it is many times more effective than alkaline products and offers an effective substitute for conventional solvents like petroleum and white spirits in almost all cases. A 5% Veclean LowCOD emulsion in water alone is even much more effective than most undiluted solvents. Veclean LowCOD is excellently suitable as a circulation medium as usually used in industrial cleaning and tank and bulk cleaning.

Photo 1: Industrial cleaning with Veclean LowCOD



Waste

The emulsion that results after a cleaning with Veclean LowCOD can be easily processed. When heated to a specific temperature, the emulsion separates within a few hours into an oil and a water phase. The water phase will contain very little organic material, so that requirements relating to waste water can be fulfilled. The Chemical Oxygen Demand (C.O.D.) will be less than 5,000 mg/l O_2 and the water will contain less then 200 mg/l mineral oils. This separation process is reversible. In other words: after cooling of the emulsion, for example during transport or storage, the emulsion is heated to a specific temperature and after a few hours, the wastewater will separate again into a water phase and an oil phase.
Depending on the starting concentration of Veclean LowCOD, the quantity of waste can be limited to 95%. The remaining 5% oil waste should be disposed-of as oil waste.

Since the wastewater can meet very stringent requirements after separation, it is possible for Vecom to accept Veclean LowCOD waste and to process it in one of the Vecom waste processing installations.

Photo 2: Separation of Veclean LowCOD into an oil and water phase.

Practical Example

Vecom Industrial Services has carried out a number of successful cleaning operations using Veclean LowCOD. Two different types of cleaning operations using Veclean LowCOD will be explained here.

1
At the company Shell, a small heat exchanger of approximately 1m^3 capacity, contaminated with cokes and bitumen, was cleaned. This contamination was present at the product side of the heat exchanger. The cleaning was done using circulation and with heating, using a 10% Veclean LowCOD solution.
The Veclean LowCOD emulsion was treated in a wastewater treatment installation at the Vecom works after the cleaning. The oil phase and the water phase gets separated after heating to a specific temperature. In order to determine whether the water phase is really clean, the Chemical Oxygen Demand (COD) can be determined. This provides an indication of the organic substances present in the water. In addition, the content of mineral oil is determined. These are the main parameters for determining whether the separation has taken place sufficiently or not.
Ultimately, 93% of 'clean' water was obtained from the emulsion and 7% oil waste was left over.
The analysis results have been presented in the table below.

Table 1: Results of the analysis of the water layer after separation with Veclean LowCOD.

Parameters	*Content av.*
Chemical Oxygen Demand (COD)	4,300 mg/l O_2
Mineral oils	70 mg/l
Heavy metals: Cu, Ni, Zn, Pd & Cr	< 0.5 mg/l

2
At Corus in IJmuiden a lub oil tank with a volume of 25 m^3 was cleaned in collaboration with Mourik Services B.V. The installation consisted of a steel tank in which the oil is heated with 95°C water. The installation was heavily contaminated with residues of old oil and was fully cleaned with circulation at a relatively low temperature (50°C). It was, however, not possible to fully fill the installation with cleaning medium and as a result, the ceiling of the tank could not be cleaned with circulation. The results can be clearly seen from Photo 3: the bottom has been thoroughly cleaned. The contamination is still visible in areas which Veclean LowCOD was not able to reach.

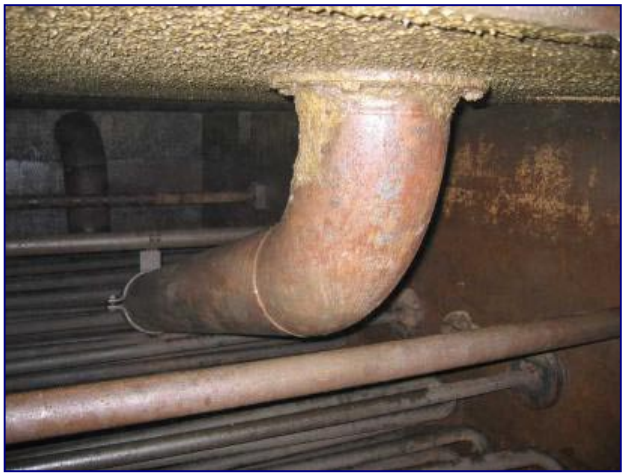


Photo 3: Lub oil tank (25 m^3) after cleaning.

Where earlier several persons had to use high pressure water jets for several days to clean the installation, it now is possible to obtain better results within a few hours using circulation with Veclean LowCOD than ever before.

The use of Veclean LowCOD provides major advantages in the field of environment and safety: it is now no longer necessary for several persons to enter the tank to remove the contamination, thereby reducing the risks of accidents as well as the cleaning time, enabling the production process to be restarted sooner.

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