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CELDAR ® TECHNOLOGY

Case history

EMULSION BREAKING AUTOMOTIVE INDUSTRY

Location	ITALY
PRODUCED WASTEWATER	20 cubic meter/hour
Typical problems in wastewater	Cutting oil exhausted emulsions separation

TREATMENT PRINCIPLES AND AIMS

The customer asked us to evaluate the **ELECTROCOAGULATION** for the emulsion breaking and the main objective of the company that produces about 3000 tons / year of emulsions is to be able to avoid disposal, which has a very high cost and to send the water after the oil separation, to its chemical physical plant.
Another option required was the **ZERO LIQUID DISCHARGE** and therefore the possibility of **WATER RECYCLING** with the least amount of consumption possible.
This option is possible using an **ELECTROCOAGULATION PLANT** since no chemicals are used and therefore the physical and chemical characteristics of the water to be treated have little variation compared to the treated water.

Number of electrodes	20
Type of alloy	CELDAR
Volt applied	8
AMPERES	110
Reaction time	1 hour
Temperature	38 °C
Final treatment	Flocculation

In the electrochemical process of breaking the cutting oil emulsion, during the passage of the current, a floating layer of oil-rich emulsion is removed by means of a skimmer.
In addition to the electrolysis cell, our plant also features the flocculator and a filtration system. In these sections, the oil content decreases and at the end of the process, the water obtained is treatable in a conventional chemical-physical plant.
The graph shows the analysis of the oil content in the de-oiled water

		AS IT	After 60 min. Electrolytic cell	Flocculation	Filtration	REMOVAL
pH		8,8	7,9	8,2	8,5	
Conductivity	milliSiemens	6,7	6,9	6,8	6,9	
COD	ppm	127000,0	55880,0	11176,0	2235,2	98,24
Oil content in emulsion		37000,0				
Oil content in deoiled water	ppm		5180,0	2072,0	414,4	92,00
Oil in floating layer	%	65,0				
Water recovered	%	86,0