Inside **CONDOROIL GROUP** important divisions have been developed to cover the different fields in the surface chemical treatment.

Condoroil Chemical researches and develops the most suitable product to meet any requirement in degreasing, pickling, lubricating, protection, superficial conversion, passivation, paint stripping, non destructive control, membrane conditioning and water treatment.

Condoroil Stainless, new brand name of Condoroil.
It groups all the experience matured in more than 15 years of activity carried out in the field of stainless steel pickling starting from 1898 when Condoroil Chemical developed, first in Italy, a nitric acid free pickling process.

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CORAL-CU SERIES

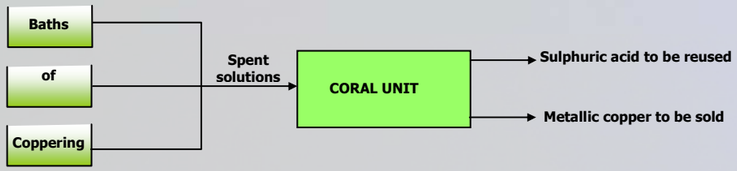
CORAL UNIT FOR THE RECOVERY OF SULPHURIC ACID AND METALLIC COPPER FROM CHEMICAL COPPERING SPENT BATHS

In steel wire, coils and tubes coppering, wastes containing copper sulphate, iron and sulphuric acid are produced

By our CORAL units, this waste can be divided in by products of a certain commercial value such as:

- Sulphuric acid
- Metallic copper

The waste becomes therefore a reduction source for the production costs

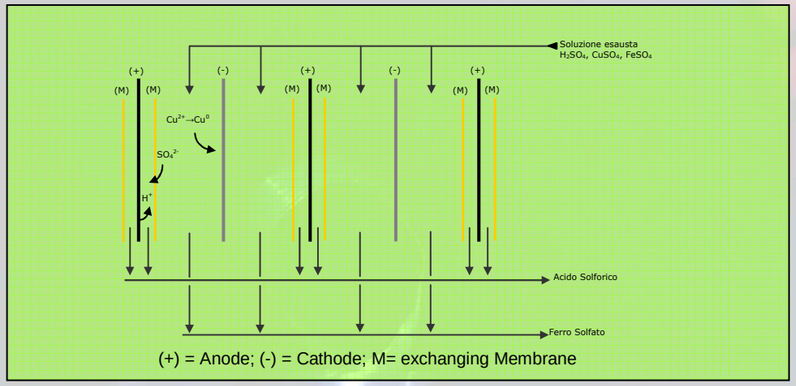


NOTE: CORAL technology can be applied also to chemical baths of brass plating and bronzing

WORKING PRINCIPLES

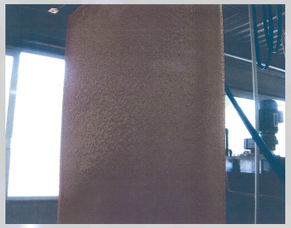
CORAL unit allows to separate the spent coppering solution into the mentioned three by-products thorough an electro dialysis process

In particular, on the electrodes of the electro dialysis cell the following reactions take place: the reduction of copper to metal and the electrolysis of water to form H^+ ions which bind to the sulphate ions re forming sulphuric acid.



(+) = Anode; (-) = Cathode; M= exchanging Membrane

Metallic copper is recovered as metallic plats with a titre higher than 98%.



As option, a cell with a particular geometry is proposed in where copper is recovered as spherules of 2-3 mm diameter.

Against a higher plant cost, it is possible to automatize the recovery process by reducing man power.

TECHNICAL SPECIFICATIONS

CORAL units are made in acid resistant plastic and are assembled on a stainless steel frame with a polypropylene grid

Working cycle is totally automatic and the operator intervention is limited to unloading copper recovered on the bottom of the electro dialysis cell.
Unit is modular and made by a series of equivalent cells having same characteristics:

Volum	400 l
Length	1.000 mm
Depth	1.000 mm
Height from the ground	3.150 mm
max current per cell	1000 A/h
Working tension	3-5 V
Recovery capacity	**15Kg copper/day**

ADVANTAGES

ECONOMICAL

Recovery of secondary raw materials of a certain commercial value such as:

- o copper
- o sulphuric acid

No more costs for purifying the spent solutions
No more costs for disposal of sludge produced in neutralization of spent solutions

ENVIRONMENTAL

Better exploitation of the chemical products
Reduction of copper hydroxide amount in sludge to dispose

OPTIONS

BD MODEL

BD Model with mechanical plates to break the metal deposit and recovery of spherules instead of sheets

TWIN MODEL

TWIN model allows to operate simultaneously on more degreasing tanks .

DOUBLE PUMPS INSTALLED

One pump is working and the other pump is in stand-by. They assure the continuous working of the plant also during maintenance

EXTRA STANDARD DIMENSIONS

To be realized upon specific request where standard dimensions should be not compatible with spaces at disposal

STAINLESS STEEL STRUCTURE