

CRYSTALLIZATION UNIT
FOR STEEL PICKLING
WITH SULPHURIC ACID
CRYSTAL

WITH AN ATTENTIVE
EYE TO NATURE



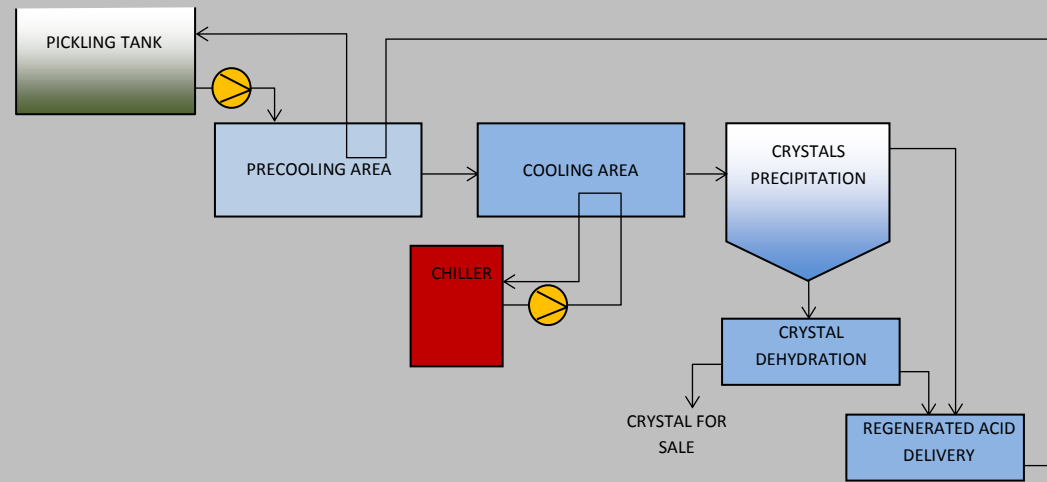


CRYSTALLIZATION UNIT FOR STEEL PICKLING WITH SULPHURIC ACID CRYSTAL SERIES

APPLICATION

CRYSTALLIZATION UNIT BASES ITS WORKING SIMPLY ON THE REDUCTION OF SOLUBILITY OF SOME SALTS AT LOW TEMPERATURES WITH THE EVENTUAL ADDITION OF A CHEMICAL COMPONENT. THE TECHNOLOGY IS MAINLY APPLIED IN IRON SULFATE PRECIPITATION FROM PICKLING BATHS OF CARBON STEEL THAT ARE THEN REGENERATED. FERROUS SULPHATE IS A COMPOUND LARGELY USED IN AGRICULTURE AND INDUSTRY AND IT CAN BE EASILY SOLD LIKE A BYPRODUCT.

WORKING PRINCIPLES



ADVANTAGES

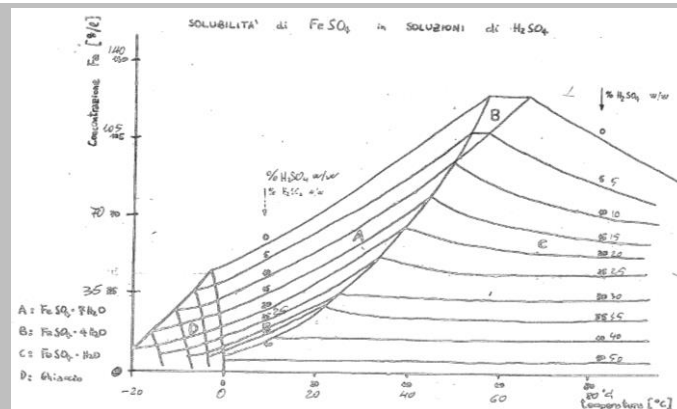
COMPARED TO THE TRADITIONAL ALTERNATIVE OF THE PICKLING SOLUTION NEUTRALIZATION, CRYSTAL UNITS ALLOW TO:

- REDUCE THE ACID CONSUMPTION
- KEEP CONSTANT THE BATH ACTIVITY
- ELIMINATE LIME CONSUMPTION
- AVOID PRODUCTION OF HIGH AMOUNT OF SLUDGE TO DUMP
- RECOVER A BYPRODUCT

COMPARED TO THE TRADITIONAL CRISTALLIZATION UNIT WORKING IN BATCH, CRYSTAL UNITS PRESENT THE FOLLOWING ADVANTAGES:

- REDUCED OVERALL DIMENSIONS
- LOW VOLUME OF ACID SOLUTION RECIRCULATED
- LOW POWER CONSUMPTION DUE TO HEAT RECOVERY EXCHANGERS
- KEEPING OF STEADY METAL CONCENTRATIONS AND THEREFORE STEADY PICKLING SPEED
- REDUCED PRODUCTION STOPS NECESSARY TO REPLACE THE TANKS

THE CRISTALLIZATION CURVES



PLANT ENGINEERING

THE PLANT IS TOTALLY AUTOMATIC AND THE BASE MODEL IS COMPOSED BY

- A FILTERING SECTION
- A COOLING SECTION
- A CRYSTALLIZATION AREA
- A DEHYDRATION SYSTEM OF THE SALTS BY DRAINING BAGS.
- A RETURN OF THE ACID WITH HEAT RECOVERY
- A CONTROL PANEL MANAGED BY PLC SIEMENS

THE UNIT IS SUPPLIED PREASSEMBLED AND PRE CABLED ON A SKID MADE WITH STAINLESS STEEL TUBULAR AND WALKING SURFACE WITH POLYPROPYLENE GRID. THE FUNCTIONING IS TOTALLY AUTOMATIZED BY A PLC AND PANEL VIEW FROM SIEMENS. THE INSTRUMENTS ARE VERY RELIABLE AND MAINLY COMING FROM ENDRESS + HAUSER

OPTIONAL

SULPHURIC ACID DOSING SYSTEM: CONDORCLEAN S

THE OPTION PROVIDES AN ON LINE ANALYZER FOR MEASUREMENT OF SULPHURIC ACID CONCENTRATION AND THE RESTORATION OF THE RIGHT VALUE THROUGH DOSAGE OF THE FRACTION LOST DURING PICKLING

THE ACID DOSAGE IS CONVENIENTLY CARRIED OUT UPSTREAM THE COOLING TANK IN ORDER TO MOVE THE BALANCE TOWARDS THE SALT PRECIPITATION AND TO INCREASE THE PROCESS YIELD

TWIN MODEL

FOR THE AUTOMATIC MANAGEMENT OF 3 OR MORE PICKLING TANKS

SCREW FOR CRYSTALS LIFTING

IT IS NECESSARY WHEN THE HEIGHTS REQUIRE IT FURTHERMORE IT ADDS THE ADVANTAGE TO CARRY OUT A PRELIMINARY REDUCTION OF THE WATER CONTENT OF THE CRYSTALS MAKING THE FOLLOWING DEHYDRATION SYSTEM LIGHTER..



CONVEYOR BELT

IN CASE OF HIGH PRODUCTIVITY, THE DEHYDRATED CRYSTALS CAN BE CONVENIENTLY TRANSPORTED WITH A PROPER CONVEYOR BELT. FOR INSTANCE TO BE DIRECTLY LOADED INTO A COLLECTION CONTAINER.

MATERIALS

THE STANDARD CONFIGURATION INCLUDES THE CREATION OF THE LOW TEMPERATURE OPERATING SECTION IN STAINLESS STEEL AISI 316L AND THE REMAINING PART IN PLASTIC MATERIAL SUCH AS POLYPROPYLENE (PP) AND POLYVINILIDENFLUORIDE (PVDF). MATERIAL DIFFERENT THAN THE STANDARDS ONES ARE USED WHEN REQUIRED BY THE SOLUTION OR IN CASE OF SPECIFIC REQUESTS..

DEHYDRATORS DIFFERENT FROM THE DRAINING BAGS

THE USE OF DRAINING BAGS FOR THE CRYSTALS DEHYDRATION IS A VERY ECONOMIC OPTION FOR LOW FUNCTIONING OPERATIONS. IN CASE OF LARGE PRODUCTION OF CRYSTALS, THE USE OF A MORE PERFORMING DEHYDRATOR WHICH WORKS MORE AUTOMATICALLY IS GENERALLY PREFERRED. DEPENDING ON DIFFERENT TECHNICAL AND ECONOMIC PARAMETERS, WHICH HAVE TO BE DISCUSSED FOR EACH SINGLE CASE, CONDOROIL PROPOSES THE FOLLOWING MACHINES AS REPLACEMENT TO THE DRAINING BAGS

- VACUUM ROTATING FILTER
- FILTER PRESS
- CENTRIFUGE



DOUBLE INSTALLED PUMPS

OF WHICH ONE IS WORKING AND THE OTHER ONE IS IN STANDBY TO ASSURE THE CONTINUITY OF WORK IN CASE OF BREAKING OR PLANNED MAINTENANCE

CONDORHIBIT SAFE S7

SPECIFIC INHIBITOR FOR PICKLING. THE PRODUCT DOES NOT POLLUTE THE RECOVERED IRON SULFATE MAKING IT SALEABLE AS SECONDARY RAW MATERIAL

NON-STANDARD DRAWINGS

WHERE THE AVAILABLE SPACES DON'T MEET THE CONFIGURATION OF THE STANDARD MODELS