

**BRAND INDIA ENGINEERING
E-CATALOGUE**

Date: 18-01-2025

UNITOP AQUACARE

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UNITOP AQUACARE, is an ISO 9001:2008 certified leading engineering organisation with four decades of experience in Heat Transfer and Process Engineering projects for design, manufacturing, supply, installations and services. UNITOP AQUACARE is a trusted name in the field of Industrial Evaporation & Drying Technologies having more than 250 clientele worldwide with number of repeated orders. The Company is promoted by Mr. S N Mondkar, a Chemical Engineering graduate from IIT Mumbai having vast experience over 45 years in the Process Engineering Industry.

Products Description

CAUSTIC RECOVERY PLANT

Technical Details	Recovery of 90% caustic from weak lye & recycle back to Merceriser CRP results in substantial reduction in the size of effluent treatment systems like ETP, RO, Evaporators Payback within 6-9 months
ITC HS Codes	8442 30
Certification/ Standard	ISO
Issuing Agency	---
Date of Issue	12-12-2012

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Date of Expiry
End Use Sectors
Product Images

HOW CAUSTIC RECOVERY PLANTS HELP TEXTILE MILLS ?

Reuse of Caustic back to Merceriser, to reduce Caustic Soda consumption.
Hot water if produced can be used in process / boiler, to reduce Live Steam consumption.
Reuse of Hot condensate in Merceriser, to reduce steam / water consumption.
Recovers & Recycles Good Quality Water, to reduce water requirement.
Reducing alkaline contents of effluent, to reduce acid consumption at ETP.
Reducing TDS of effluents, to reduce the size of ETP and its operating cost.
Meeting environmental standards, to enter global competition.

ORGANISATION

We are in business with textile mills with over 30 years and have brought many a progression in the field of Evaporation, Engineering and Heat Recovery Systems with more than 50 Evaporation Plants world wide. Our efforts are aimed to make the plant highly energy efficient and we designed Low Pollution plants to the liking of Foreign Country Based.

We take design Caustic Recovery Plant to suit the individual requirement and select the equipment from our standardised range to optimise plant design with respect to consumption of Steam, Power, Water and guarantee excellent yields without degradation of quality. Our norms on Parameters are a requirement of those who value Textile Research Association.

We supply plants loaded with these excellent features & supporting Documentation: the reason why we have in our LIST OF CLIENTS: the reputed customers in India & in other countries like Sri Lanka, Nepal, South Africa, Indonesia, South Africa. We are preferred even in Global Competition.

And our after sales service is what our customers like the most: advice from the list of Repeat Customers which includes: Precision, Orange Juice, Citrus, Thermal Spraying, Cakes, CDTs, V. G. Drums, Mayaguez, Burnout, Thermal Finishing, Texturing, Acid-base, Colour, Mechanical. The nature and operation goes on, just our work ends!

We get totally involved with the customer on the well being of the plant. This is reflected in our specially designed computer based Operator's Training Program. On request we also undertake Annual Maintenance / Operator & Maintenance contracts.

FEW OF OUR LARGE INSTALLATIONS

PLANT	CAPACITY LFD FEED	RESTART ORDER	MERCERISER BRAND
Birla Century	1,75,000	2nd part	Kulzer
Mishra Text & Spins	2,00,000	2nd part	Kulzer
Praman Polymers	1,10,000	3rd part	Kulzer
Shreejith Text	3,50,000	2nd part	Ural
PT Swadha Indonesia	2,40,000	1st part	Daniel
PT Hindustan Indonesia	4,50,000	1st part	Daniel
NGL	1,30,000	Remodelling	Kulzer
Suryanath Textiles	2,50,000	Remodelling	Kulzer
Suraysh Textiles	1,00,000	2nd part	Culzer
Textile Textiles	1,00,000	3rd part	Culzer

UNITOP
Apacare
Evaporation & Drying Systems

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Get best from the waste !

Recover huge profits draining with your effluents

Pay back period 1-6 months!

CAUSTIC RECOVERY PLANT

FOR MERCERISERS

PRODUCT RANGE:
 CAUSTIC RECOVERY PLANT
 ZERO EFFLUENT DISCHARGE SYSTEMS
 FLASH HEAT RECOVERY SYSTEM
 VACUUM / SPRAY DRYERS
 HERBAL EXTRACTION SYSTEMS
 ICDISED SALT MANUFACTURING

UNITOP
Apacare
Evaporation & Drying Systems

An Organisation with a difference

NEED OF CAUSTIC RECOVERY

Mercerisers in textile mills are used to mercerise desized / scoured / bleached / dyed yarn / knit / fabric. Depending on the design of Merceriser they generate substantial quantity of dilute caustic liquor - wash liquor of concentration of about 20 - 60 g/L containing impurities of various nature. If drained to effluent treatment plant, it causes substantial loss of caustic soda and also severe problems in meeting the environmental standards.

Caustic Recovery Plant concentrates wash liquor and allows recycle of Caustic Soda Lye to Merceriser and also recovers water to reuse. This makes the Plant highly profitable venture.

HOW CAUSTIC IS RECOVERED ?

Weak liquor containing caustic at low concentration is heated to its boiling point with the help of heat source like Steam, Thermal Oil or even waste heat.

Boiling liquor is flashed at lower pressure / temperature and the vapours so generated are re-used in the next stage. By repeating the process in multiple stages, water from weak liquor is evaporated to achieve product with caustic concentration at 250 to 350 g/L in case of dry cloth merceriser or 400 - 450 g/L in case of wet cloth merceriser. The final concentration is selected to eliminate the possibility of excess weak lye overflow.

IT IS ALL ABOUT CAUSTIC HANDLING, RECOVERY & PURIFICATION - AT SINGLE SOURCE

BLOCK DIAGRAM - CONTINUOUS MERCERISATION & CAUSTIC HANDLING

The diagram shows the flow from Mercerisation (including stages like Impregnation, Stabilisation, Washing, Neutralisation, and Bleaching) to a Caustic Recovery Plant. The plant includes components like a Caustic Recovery Unit, Condensate Separator, and various pumps. Water and steam flows are indicated throughout the process, showing the integration of the recovery plant with the mercerisation stages.

WHY UNITOP CAUSTIC RECOVERY PLANT ?

Unitop Apacare has earned a name in Caustic Recovery Plant technology, thanks to its super energy plant design. We are largest supplier of Caustic Recovery Plants, world wide. Our strength is many folds:

- OPTIMISATION**
Depending on the process conditions, we design proper circuitry to optimise the process conditions and resultant Material of Construction.
- SELECTIVE USE OF MATERIAL OF CONSTRUCTION**
We supply the plant in Material of Construction which can last the investment while accommodating the quality requirements.
- TALOR - MADE DESIGN**
UNITOP design tailor - made systems to suit individual customer's needs & the local conditions. Like fuel prices, quality of water & even the space constraints.
- LOWEST STEAM CONSUMPTION**
Our unique selection of Parameters & steam saving innovations improve the steam economy to as high as 6.5 kg evapn / kg of steam. This is possible because of provision of:
 ■ Optimum Number of Stages
 ■ Multiple Condensate Recycling Systems
 ■ Feed Preheating system
 ■ Thermo compressor (TRC), when necessary
 The steam consumption is 20% - 30% lower than other manufacturer. Unbelievable but True! Optimum Heat Economy for every plant works out to ensure value for money.
- CONDENSATE QUALITY**
Condensate provided in Flash Tanks ensure good quality of condensate with pH in the range of 7 - 8, resulting in minimum loss of caustic through condensate & by the liking of Pollution Control Boards.
- EXCEPTIONAL IN PLANT DESIGN**
Our plant can generate hot water at such temperature that all of it can get consumed, in which case, generation of Hot water can recover the cost of steam supplied to evaporation plant, making caustic recovery virtually free! In case, hot water generated cannot be consumed, we have option UNITOP's unique feature - Adiabatic Evaporator utilises the exhaust vapor from the last stage. This reduces Steam consumption significantly.
- MODERATE POWER CONSUMPTION**
Proper selection of pumps to maintain high pumping efficiency results in moderate power consumption.
- LOW MAINTENANCE**
Moving parts of the plant are Pumps only - resulting in low maintenance cost! - about 2 - 3% of the total project cost.
- LOW SPACE REQUIREMENT**
Our plants are compact, with low headroom requirement. All operations are from Ground Level. Plant can be fitted inside or above the processing house.
- EFFECTIVE AUTOMATION**
Entire plant operations is automated and hence the plant can be monitored & controlled by a single person. Advanced plants are equipped with Level, density, pH, conductivity along with safety modules and PLC controlled operations with DASSCAD. Trouble shooting modules - another first from UNITOP!

BLOCK DIAGRAM - CAUSTIC RECOVERY PLANT

The diagram illustrates the internal components of the caustic recovery plant, including a Feed Tank, Condensate Separator, Flash Tank, and various pumps like the Product Pump, Feed Pump, and Condensate Return Pump. It shows the flow of steam, hot water, and caustic liquor, highlighting the system's efficiency in recovering and reusing heat and materials.

Sectors of Interest
Countries of Exports

TEXTILE , PHARMA
BANGLADESH, BRAZIL, CHINA, HUNGARY, INDONESIA, PAKISTAN, SPAIN, THAILAND, TURKEY

BRAND INDIA ENGINEERING E-CATALOGUE

Foreign Collaboration	NIL
Is OEM Supplier?	Yes
Is After Sales Service Provider?	Yes
Importance of niche products	
Potential market of niche products	
Product Supply Record	
Patented Technologies	
Awards/Accolades	