




CORROSIVE CHEMICALS

PROCESS
TECHNOLOGIES
PROVIDER





GLOBAL
EQUIPMENT
AND PROCESS
TECHNOLOGIES
PROVIDER FOR
CORROSIVE
ENVIRONMENTS



Since 1960, Mersen has strengthened its Process Technologies know-how, especially related to the use of HCl. The first skid-mounted turn-key solution was delivered 30 years ago in 1986.

You can rely on our extensive experience for design and manufacture of corrosion resistant process equipment and ancillaries. The home-made produced and impregnated isostatic graphite - Graphilor® - together with the in-house silicon carbide - Boostec® - materials are really key components to ensure the best corrosion resistance.



HCl BURNER AND HCl ABSORPTION
WITH STEAM GENERATION



HCl DISTILLATION
AND HCl GAS DRYING

FROM PROCESS KNOW-HOW TO SKID-MOUNTED TURN-KEY DELIVERY

Mersen is a global leader combining engineering and supply of equipment for corrosive fluids.

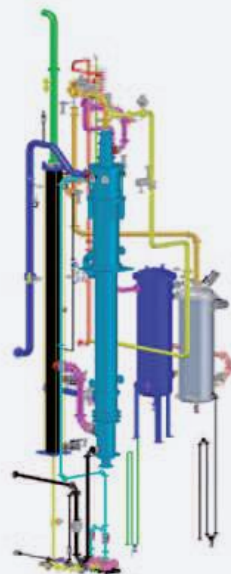
ENGINEERING

- Conceptual design
- P&ID
- Basic/detail engineering
- Main equipment supply



PROCUREMENT

- Instrumentation
- Piping and valves
- Automated control cabinet
- Main equipment supply



CONSTRUCTION

- Main equipment supply
- Modular assembly includes the installation of steel structure, equipment, piping & valves, instrumentation, cabling and junctions boxes = Skid-mounted turn-key solution



SERVICES

- Feasibility studies
- Project management
- Commissioning
- Control and monitoring
- Start-up and training
- After-sales service and maintenance solutions
- Repair and rehabilitation work



PROCESS TECHNOLOGIES PORTFOLIO

With our innovative range of process technologies, we can provide you an engineered solution to transform your corrosive feed stock according to your requests.

PROCESS FUNCTION	TECHNOLOGY	VARIANT	H ₂ SO ₄	HCl	Cl ₂	HBr	Br ₂	P ₂ O ₅	Brine	Flue Gas	FeCl ₃
Absorption	by falling film			✓		✓					
	by adiabatic			✓		✓				✓	
Burner	with hydrogen (H ₂)	without heat recovery		✓	✓	✓	✓				
		with heat recovery		✓	✓						
	with methane (CH ₄)			✓	✓						
Concentration	pre-concentration	(from 0 to 38%)	✓	✓		✓		✓			✓
		(from 20-60 to 75%)	✓			✓		✓			✓
	medium concentration	(from 70 to 85%)	✓								
	high concentration	(from 85-96%)	✓								
Dilution			✓	✓		✓		✓			
Distillation/ Desorption/ Stripping	without azeotrope breaker			✓	✓	✓					
	with azeotrope breaker	Pressure Swing (=Dual pressure)		✓							
		Salt (CaCl ₂ , H ₂ SO ₄ or MgCl ₂) effect			✓						
Gas Drying	with condensers			✓		✓					
	with molecular sieve tower (Zeolite)			✓							
	with packed tower (H ₂ SO ₄ drying)			✓	✓						
Gas cleaning / Vent treatment	with caustic soda scrubber			✓	✓	✓	✓				
	with water scrubber			✓		✓	✓				
	with quench and scrubber			✓	✓					✓	
Inorganic removal	debromination (Br- removal)								✓		
	dechlorination (Cl ₂ removal)		✓	✓					✓		✓
	defluorination (F- removal)							✓			
Organic removal	with packed tower	with Nitrogen (N ₂)	✓	✓		✓		✓	✓		✓
		with Air (O ₂ +N ₂)	✓	✓		✓		✓	✓		✓
		with live Steam		✓		✓		✓	✓		✓
		with vacuum	✓	✓		✓		✓	✓		✓
		with Reboiler	✓	✓		✓		✓	✓		✓
Production	from brine						✓				
	from Fe and Cl elements										✓
	from chlorine (Cl ₂)			✓							
	from bromine (Br ₂)					✓					
Temp. Control	by quench			✓						✓	
	by heat exchanger package		✓	✓		✓		✓			
Vaporizer			✓	✓	✓	✓					
Vacuum system	by ejector		✓	✓	✓	✓		✓	✓		✓

FOCUS ON SINTACLOR®

WORLD-LEADING HCl BURNER PROCESS TECHNOLOGY

MERSEN HCl SYNTHESIS UNIT DESIGN WITH TOP BURNER "Best available design for safety and environment"

1

HYDROGEN AND CHLORINE GAS ARE ALWAYS ABOVE THE PIPE RACK.

- Therefore Atex area is far above the ground to maximize the safety.

2

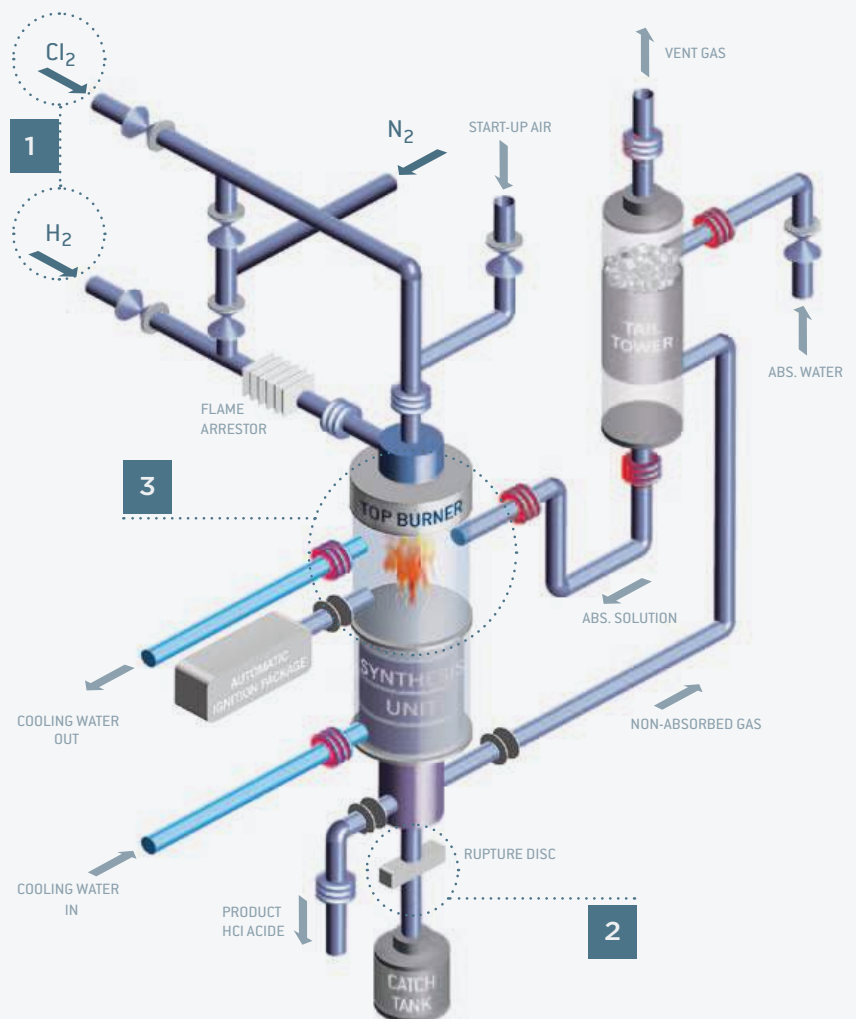
MERSEN TOP BURNER TECHNOLOGY MINIMIZES THE DISCHARGE OF HAZARDOUS & CORROSIVE GASES (HCl, H₂ & Cl₂) TO THE ATMOSPHERE WHEN A RUPTURE DISC BREAKS, WHEREAS BOTTOM BURNER TECHNOLOGY RELEASES ALL TO THE ATMOSPHERE.

- If and when a rupture disc breaks, Mersen's top burner technology, by nature of design, ensures that minimal HCl gas is released to the atmosphere. HCl liquid is safely collected in a catch tank.

3

TOP BURNER (MERSEN TECHNOLOGY) IS SAFER THAN BOTTOM BURNER TECHNOLOGY

- The volume of explosive and corrosive gas within a bottom burner technology assembly is three to ten times that of a Mersen top burner assembly, making the Mersen design inherently much safer.



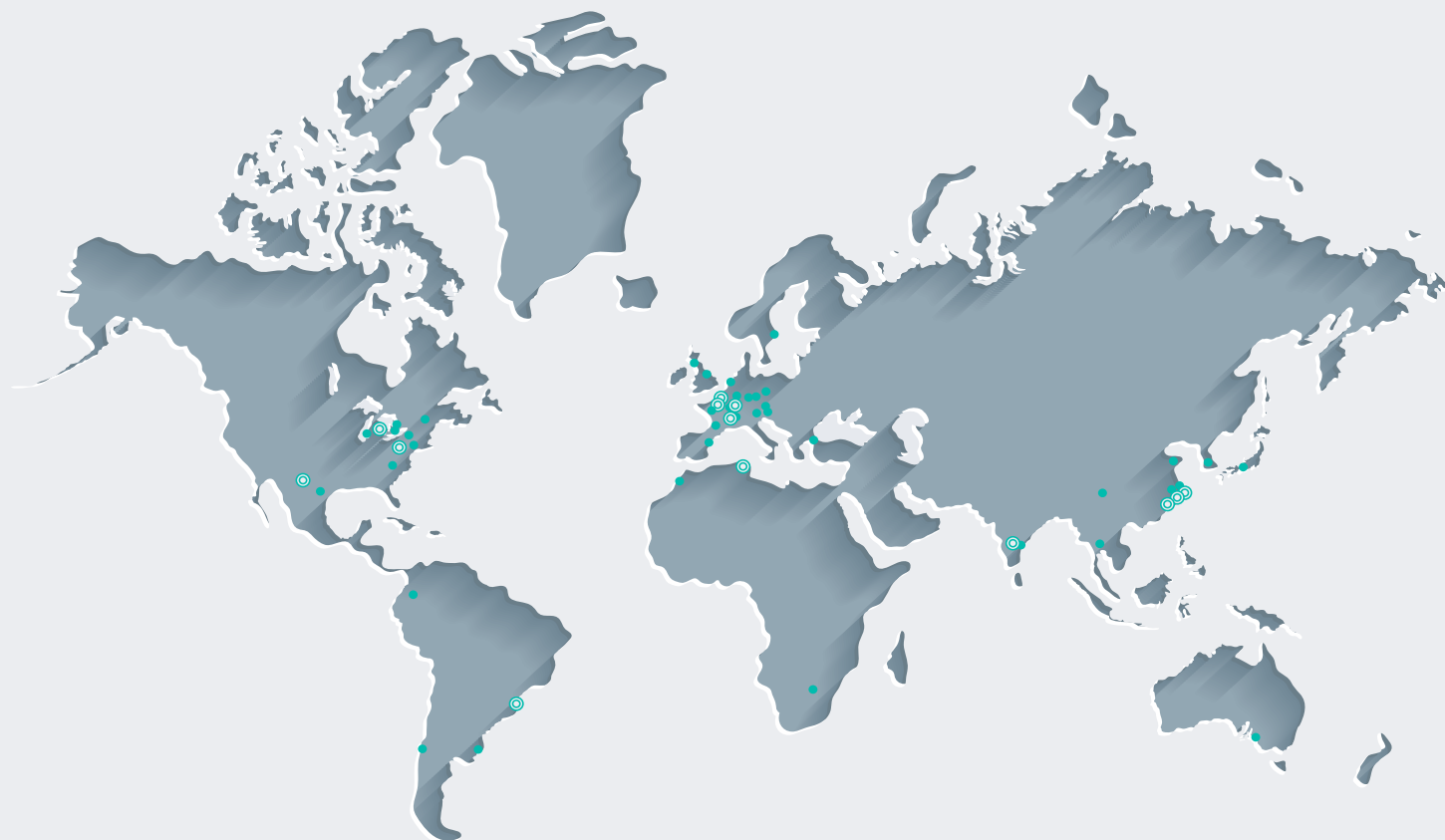
Safety

Exclusivity : Mersen's Burner Management System (BMS) is the only safety protection according to EN 746-2 "industrial thermo-processing equipment / Safety requirements for combustion and fuel handling systems" or NFPA 86. Mersen's BMS is TUV certified.



Global experience & references

- More than 600 Sintaclor® units in production in the world
- More than 50 skid-mounted projects managed during the last 10 years



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