

CRYO-CONDAP[®]

*for Cryogenic Recovery and Abatement
of Volatile Organic Compounds*

Providing superior solvent recovery solutions:

- *Meeting the toughest emissions targets*
- *Minimising operating costs*
- *Treating multi-solvent streams*
- *Offering expert technical support*





Air Products' proprietary heat exchanger

Meeting the emissions challenge

At Air Products we understand the impact environmental legislation can have on your business. That is why our cryogenic condensation technology (CRYO-CONDAP®) has been developed to not only meet the toughest government legislation worldwide, but also to improve process efficiency. CRYO-CONDAP is Air Products' proprietary technology for recovering Volatile Organic Compounds (solvents).

How does it work?

The CRYO-CONDAP system uses liquid nitrogen in a heat exchanger to cool down the process gas. As the temperature drops, so does the capacity of the gas to carry the VOCs as vapour. The VOCs condense and freeze into particles. The process gas now conforms to environmental legislation and can be discharged into the atmosphere. The solvents can be recovered for re-use where appropriate. The clean Nitrogen gas is available for re-use for blanketing and purging operations on site. In some cases, the recovered costs can exceed the costs of control.

Key Benefits

- **Emissions targets met** – Air Products' systems enable you to conform to the toughest environmental legislation on VOC emissions by reducing emissions to below acceptable legislative levels.
- **Solvent recovery** – the CRYO-CONDAP system can recover virtually 100% of most types of solvents, enabling re-use back into the process
- **Minimisation of operating costs** - because the process vaporises liquid nitrogen, that nitrogen gas can be used for purging or blanketing operations elsewhere on site and is therefore effectively 'free'
- **Multi-solvent streams** – CRYO-CONDAP systems can treat multiple solvents present in one gas stream such that emission levels are met both for the individual solvents and the total stream
- **Expert Support** – Air Products' world class Cryogenics and Engineering teams provide expert support and consultation

Materials and standards of construction

■ Instrumentation and power devices	Suitable for Zone 1 hazardous area
■ Heat exchangers	Built to AD Merkblätter and certified by the German TÜV
■ Electrical equipment	In accordance with the regulations of the German VDE
■ Operator interface (HMI)	Supplied as standard, PC to be located in a safe area
■ Control equipment with PLC	To be mounted in a safe area, Siemens S5 or S7 available as standard

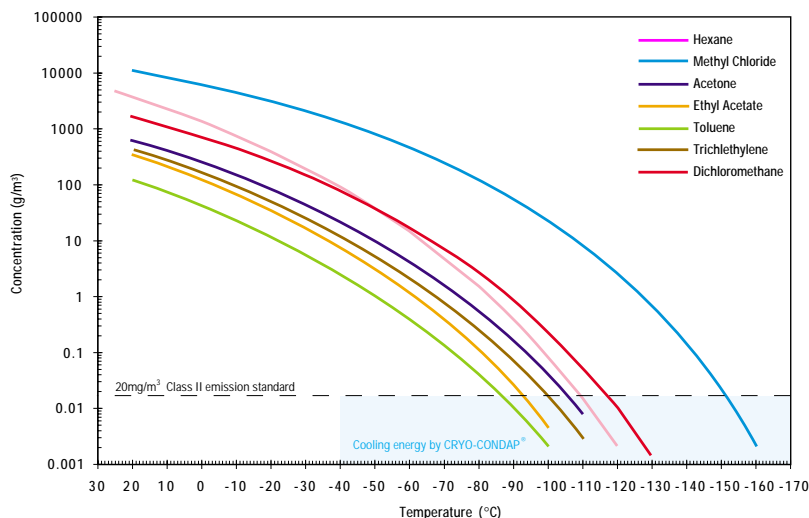
All systems are designed and built to comply with Air Products' worldwide Engineering Standards.

Utilities

Exact utility requirements would be determined for a specific system and depend on utilities available on site.



Saturation concentration of some VOCs



tell me more
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