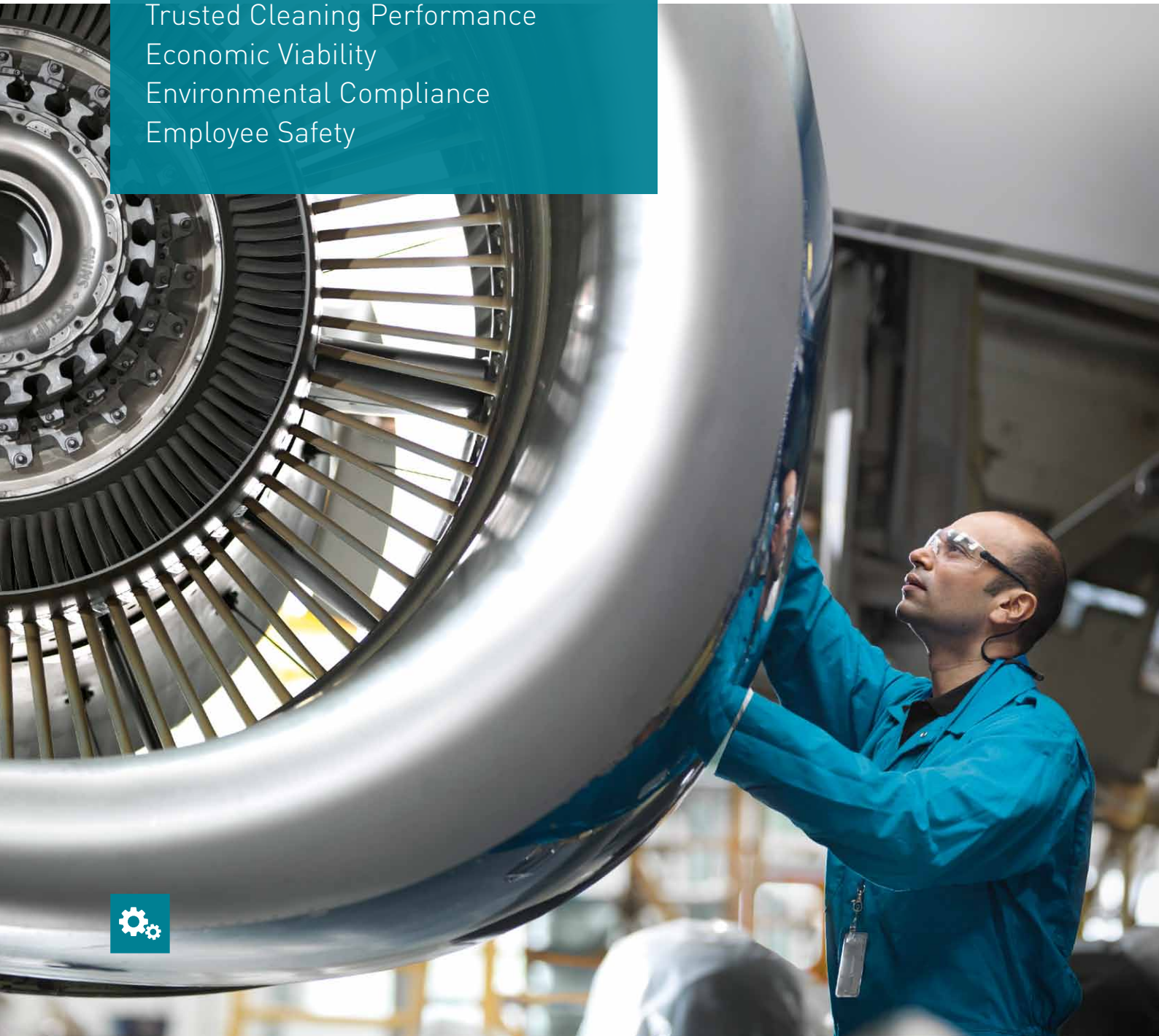


SUSTAINABLE USE OF CHLORINATED SOLVENTS

Trusted Cleaning Performance
Economic Viability
Environmental Compliance
Employee Safety








ECONOMIC AND
SUSTAINABLE
CLEANING WITH
CHLORINATED
SOLVENTS

PHYSICAL AND CHEMICAL PROPERTIES SUPPORTING HIGH-PERFORMANCE CLEANING

Due to their relatively high density, DOWPER™ MC, NEU-TRI™ E and MECTHENE™ MC are highly efficient in removing particles or heavy contamination. The solvents have an excellent combination of low boiling points, low surface tension, and very strong grease solubility. They demonstrate superior chemical stability against contamination and humidity, and their evaporation characteristics help metal surfaces to dry quickly and completely. This makes them suitable for cleaning porous metals from which trapped moisture is often difficult to remove. The absence of a flash point allows them to be used in hermetically sealed cleaning equipment running either under vacuum or atmospheric pressure, the latter reducing the investment costs significantly. Due to their good distillation behaviour, Chlorinated Solvents can continuously be distilled on-site in the cleaning equipment, which supports applications with a high throughput of contamination.

Typical physical parameter			
Density g/cm ³ (25°C)	1.619	1.465	1.320
Boiling point (°C)	121	86.7	39.8
Flash point (°C)	None	None	None
Relative Vapour Density	5.76 (air = 1)	4.5 (air = 1)	2.93 (air = 1)

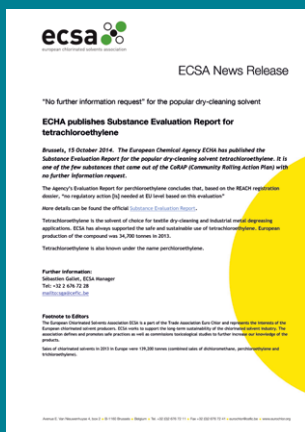


CHLORINATED SOLVENTS – RECOGNISED SUSTAINABLE SOLUTIONS

Products and services from SAFECEM have repeatedly been recognised by authorities and associations as sustainable and innovative solutions for the use of chemicals.

SUBSTANCE EVALUATION REPORT FOR PERCHLOROETHYLENE

- ECHA published its Substance Evaluation Report on Perchloroethylene in October 2014
- Report concludes that no further regulatory action like re-classification or authorisation is needed at EU level



RESPONSIBLE CARE® AWARD

- Product Stewardship Accenture Award from Cefic in 2016
- The use of Chlorinated Solvents within the COMPLEASE™ Chemical Leasing Model unlocks the potential of the Circular Economy



AUTHORISATION FOR TRICHLOROETHYLENE

- Granting of Authorisation proposed for 7 years
- COMPLEASE™ Chemical Leasing and CHEMAWARE™ Knowledge Services are key elements for the future use of Trichloroethylene in metal cleaning applications



"WE NOW HAVE A CLEARLY
DEFINED CYCLE OF DELIVERY,
TESTING, WASTE MANAGEMENT,
DOCUMENTATION,
CONSULTANCY AND HSE
COMPLIANCE ALL WITHIN A
MANAGED COST."

Stephen Ingham, Aircelle Ltd.,
a member of Safran Group

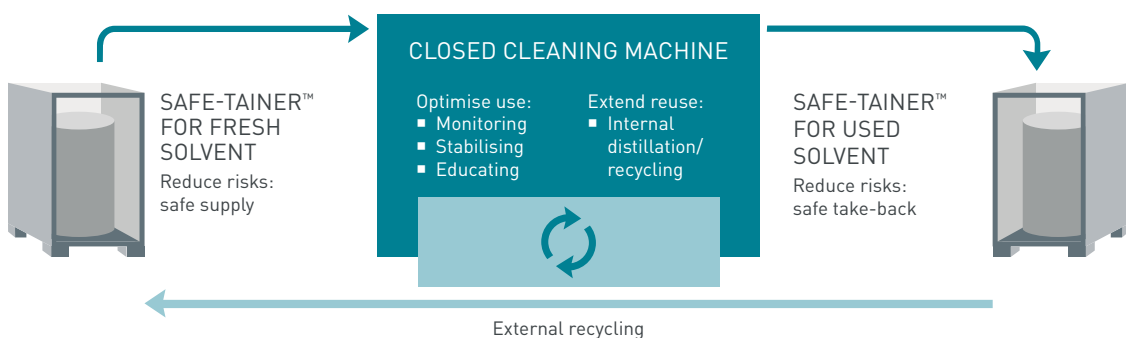
The cleaning and degreasing of metal components is a quality-critical step in manufacturing in a variety of industries and applications, requiring the right products and expert know-how. Chlorinated Solvents like Perchloroethylene, Trichloroethylene and Methylene Chloride have proven themselves over several decades to be trusted cleaning media for achieving the desired results, especially in applications with a high level of contamination or demanding industries such as automotive or aerospace.

Under the brand names DOWPER™ MC, NEU-TRI™ E and MECTHENE™ MC, SAFECEM delivers high-quality, virgin-grade solvents, specially formulated to give outstanding cleaning results in metal cleaning applications. They are suitable for all metals, including light metals such as aluminium or titanium, and enable the removal of a wide variety of contaminants. Due to their physical and chemical properties, Chlorinated Solvents can be re-covered in the distillation unit of the cleaning machine, reducing the solvent consumption significantly and contributing to a Circular Economy.

THE CLOSED-LOOP SOLUTION – ENABLING WORKER SAFETY AND ENVIRONMENTAL COMPLIANCE

To meet safety and environmental requirements, Chlorinated Solvents are delivered in the double-walled SAFE-TAINER™ System. In line with the principles of Responsible Care® and Product Stewardship, the SAFE-TAINER™ System was developed to enable the user of Chlorinated Solvents to benefit from the unique cleaning characteristics, while at the same time minimising the risks during storage, filling, transfer, handling and maintenance operations. One system is exclusively designed for the supply of fresh solvent and the other for the take-back of used solvent. Together they form a virtually emission-free closed-loop solution. In combination with a closed cleaning machine they are recognised as Best Available Technology (BAT).

This solution not only enables a safer supply of fresh material, it also allows users of Chlorinated Solvents to safely return used solvents to be recovered in an accredited professional recycling facility. Furthermore, the Service Elements provided by SAFECEM, such as MAXISTAB™ and MAXICHECK™, prolong the lifetime of the solvents in the cleaning machines, conserving resources and thus further contributing to a Circular Economy.



WHY SHOULD YOU USE CHLORINATED SOLVENTS FROM SAFECEM?

- Chlorinated Solvents deliver a trusted cleaning performance, achieving the desired results especially in applications with a high level of contamination or industries with high-quality cleaning demands.
- Due to their physical and chemical properties, Chlorinated Solvents can easily be reused on-site. Their lifetime can be prolonged even further when used together with MAXISTAB™ and MAXICHECK™ Service Elements from SAFECEM, making them economically viable while contributing to a Circular Economy.
- With the Closed-Loop Solution, which is recognised as Best Available Technology, environmental compliance can be achieved, especially within the innovative business model COMPLEASE™ Chemical Leasing.
- The SAFE-TAINER™ System enables users of Chlorinated Solvents to meet a variety of legislative requirements and applies the principles of Responsible Care® and Product Stewardship by taking into account health and safety-related aspects of a product throughout its lifetime.

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SAFECEM EUROPE GMBH

Tersteegenstr. 25

40474 Duesseldorf

Germany

Phone: +49 211 4389-300

Fax: +49 211 4389-389

service@safechem.com

www.safechem.com

