

INSPIRING INNOVATION









EXCELLENT COMPATIBILITY



OPTIMIZE PROCESS



ENVIRONMENTALLY

INVENTEC, A DEHON GROUP COMPANY

A family company created in 1874, first specialized in the filling and distribution of refrigerants.



Dehon group companies:







Leak detection & energy for refrigeration



High-risk chemicals



Soldering, Cleaning & Coating



Powder, atomizer & sieving activities



750 collaborators worldwide: 13 subsidiaries in 3 continents

INVENTEC PERFORMANCE CHEMICALS,

WORLDWIDE PROVIDER OF SOLDERING, CLEANING & COATING SOLUTIONS FOR ELECTRONIC, SEMICONDUCTOR AND INDUSTRIAL APPLICATIONS

For nearly **60 years** we have shown leadership in innovation by putting **environmental & health impact** and reliability at the core of our product development. Emphasizing our dedication to innovation, **10% of our turnover is invested in R&D**.

With **ISO 9001 & 14001 production sites** in France, Switzerland, USA, Mexico, Malaysia and China we can guarantee a smooth and cost-effective supply chain.

With more than **1500 satisfied customers** & more than **300 products**, we are armed to help you make the right decision based on your requirements, process and sustainable targets.



OUR GUIDELINES

PROXIMITY

a worldwide presence to support our customers

PERFORMANCE

specialized teams and effective technical solutions to serve our customers

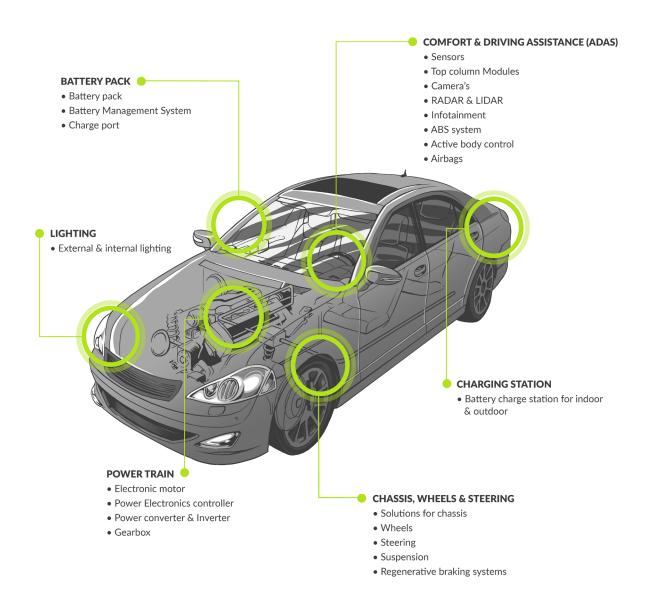
PROTECTION

friendly solutions for health & environment

OUR EXPERTISE DEDICATED TO THE AUTOMOTIVE INDUSTRY

Because of it's **strict safety & environmental requirements**, the automotive industry is highly regulated. Down the value chain, everyone is focused to deliver reliable top products.

Inventec has been supplying the automotive industry since its creation. With our **soldering**, **cleaning & coating solutions**, we contribute substantially to the high reliability requirements of the automotive industry.



Key infos

Inventec France is IATF certified: proof of good quality management system

More than 300 automotive satisfied customers

+200 products for soldering, cleaning or coating applications



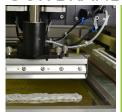
Soldering

OUR EXPERTISE IN SOLDERING FOR THE AUTOMOTIVE INDUSTRY

Inventec offers a wide range of soldering products that go beyond the **technical requirements set by industry standards and environmental legislation**. Inventec's expertise is focused on providing **high performance assembly solutions**.

Our soldering product formulations have been **free of halogen for over 15 years** and some products show very low solder voids on large area components. With our specific test method: the Bono Corrosion Test, which is an alternative to the SIR test, we can guarantee a high chemical reliability of solder paste residues.

OUR BRANDS IN SOLDERING



ECOREL[™]

SOLDER PASTE RANGE

Solder pastes range with different alloys in powder sizes from T3 up to T6 and chemistries to take up today's challenges (low impact of flux residues, low voids %, free of halogen, thermal cycle performance...)



ECOFREC[™] SOLDER FLUX RANGE

Solder flux range are specially designed to meet current challenges in wave selective soldering and are available in both: solvent- & water-based (no VOC).

APPLICATION	SEGMENT			
SMT ASSEMBLY	POWER TRAIN			
	ADAS (COMFORT & DRIVING ASSISTANCE)			
WAVE & SELECTIVE FLUX SOLDERING REPAIR & REWORK	LIGHTING			
	CHARGING STATION			
	BATTERY PACK			

Soldering

RECOMMENDED SOLDERING PRODUCTS







SOLDER PASTES



ECOREL™ Free 305-16LVD

SAC305 lead free alloy solder paste

- No clean SMT printing process
- Low voiding to offer great heat dissipation
- Very good wetting on all surface finishing, including OSP



ECOREL™ HTO-16LVD

High Reliability lead free alloy

- Alloy with improved thermal fatigue resistance
- Very good wetting on all surface finishing, including OSP
- Transparent and colorless residue even after multiple reflow cycles

SOLDER FLUXES



ECOFREC™ 210

Alcohol based, no-clean high reliability liquid flux

- Excellent wettability & through-hole penetration
 - Very high SIR values
 - Very clean boards due to lowest residue levels



ECOFREC™ 320

Waterbased VOC free, no-clean liquid flux

- Soldering either with air or nitrogen-controlled atmosphere
- Excellent wettability and hole filling
- High reliability: complies with BONO corrosion test

Non-exhaustive list of soldering products. Let INVENTEC assists you to customize the best product adapted to your need.



OUR EXPERTISE IN CLEANING FOR THE AUTOMOTIVE INDUSTRY

Inventec's expertise on precision cleaning has led to a wide range of cleaning products for both **mechanical** and electronic applications.

For electronics, Inventec has cleaning chemistries to operate at different production stages:

- Before underfill for adhesion
- Before wire bonding for better bonding process
- After reflow to remove flux residues & other pollutants
- Before applying conformal coating or potting to improve adhesion

For mechanical, Inventec redefines the level of consistency and cleanliness to remove greases, oils particles & other pollutants. It can be in interoperation or in surface treatment.

OUR BRANDS IN CLEANING



TOPKLEAN[™]

HYDROCARBON CLEANING RANGE

Cleaner range used in co-solvent system or as a single solvent in vacuum cleaning process.



PROMOSOLV™

SOLVENT CLEANING & DRYING RANGE

Mono-solvent cleaners used in vapor phase cleaning process. Some of them can be used as rinsing agent in co-solvent drying or hybrid process.



PROMOCLEAN™

DETERGENT CLEANING RANGE

Detergent range for water-based cleaning in immersion or spray processes.



QUICKSOLVTM

FAST EVAPORATING SOLVENT RANGE

Fast evaporating solvents, mainly used at room temperature in manual applications.

OUR PARTNER BRAND IN CLEANING





Inventec is an authorized distributor & formulator of $3M^{\text{\tiny M}}$ Novec fluids for applications of precision cleaning. $3M^{\text{\tiny M}}$ developed the Hydrofluoroeters (HFE), considered as environmentally friendly and safe for workers.

A SOLUTION FOR EACH PROCESS & APPLICATION







APPLICATION	SEGMENT	PROCESS				
		CO-SOLVENT	VAPOR	AQUEOUS	VACUUM	MANUAL
OIL & GREASE REMOVAL ON ALUMINIUM & LIGHT ALLOYS	POWER TRAIN	~	*	*	~	
	CHASSIS & WHEELS & STEERING	*	~	*	~	V
OIL & GREASE REMOVAL FROM IRON PARTS	POWER TRAIN	*	~	~	~	V
	CHASSIS & WHEELS & STEERING	*	~	~	~	V
MAINTENANCE CLEANING FOR MECHANICS	ALL SEGMENTS	~	~	~	~	~
PCB DEFLUXING	POWER TRAIN	~	~	~	~	
	BATTERY PACK	~	~	~	~	V
	CHARGING STATION	~	~	~	~	V
	ADAS (COMFORT & DRIVING ASSISTANCE)	~	~	~	~	
MAINTENANCE CLEANING FOR ELECTRONICS	ALL SEGMENTS	V	~	~	~	~

RECOMMENDED SUITABLE POSSIBLE





Other process available: flushing

What are the different processes?

CO-SOLVENT: solvent process with hydrocarbon-based products as cleaning agent and fluorinated fluids (including HFE) as rinsing solvent

VAPOR: solvent process with 1 single solvent (fluorinated fluids) for cleaning & rinsing

AQUEOUS SPRAY: spray in air / spray in line / immersion jets / water-based flushing

AQUEOUS IMMERSION: immersion in tank with options for heating, ultrasonics, agitation (moving of cleaning baskets)

VACUUM: solvent process with hydrocarbon-based products under full vacuum

MANUAL CLEANING: spray, brush & dip without heating FLUSHING: solvent process for pipes & tubes flushing



RECOMMENDED SOLVENT-BASED PRODUCTS

CO-SOLVENT



TOPKLEAN™ EL 20P

Removal of flux residues

GREENWAY"

- Very low surface tension: efficient under low stand-off components
- Fast process allows to increase in production capacity
- High flash point safe to use, storage & transport



TOPKLEAN™ MC 20A

Hydrocarbon oils & grease removal

- Sustainable alternative to perchlorethylene & nPB
- Excellent compatibility with all metals, glasses, ceramic & many plastics
- Rinsing fluid is constantly recycled, limiting consumption

VAPOR



PROMOSOLV[™] 70

Degreasing & dewaxing

- Thermally and chemically stable in use
- Non-flammable
- Can be recycled: **ECOPROGRAM**



PROMOSOLV[™] 70ES

Removal of flux residues

- Thermally and chemically stable in use
- Non-flammable
- Can be recycled: **ECOPROGRAM**

VACUUM



TOPKLEAN™ MC 1153

Oil removal, degreasing & decontamination

- Excellent solubility of hydrocarbon oils & greases
- Limited consumption thanks to airtight equipment
- No Ozone Depletion Potential & no Global Warming Potential (GWP)



TOPKLEAN™ MC 20D

Oil & grease removal

- Thermally and chemically stable in use, so no need of using an additive
- Excellent solubility of hydrocarbon oils & greases
- No Ozone Depletion Potential & no Global Warming Potential (GWP)

MANUAL



QUICKSOLV™ DEF 70

Multi-purpose aerosol cleaner for degreasing & defluxing

- Fast evaporation
 - Non-flammable product
 - Excellent solubility of organic residues



PROMOCLEAN™ OVEN 4

Cleaning of baked-on flux residues

GREENWAY"

- Fast & efficient cleaning
- Reduces substantially equipment downtime
- Non-flammable safe substitution to IPA & other flammable cleaners



ECOPROGRAM

Service for SOLVENT RECYCLING, SOLVENT REGENERATION & ECO-CONSULTANCY

Benefits:

- to reduce the amount of waste in the environment
- to avoid cost & administration for the destruction
- to buy recycled but still high-quality product at lower cost
- to improve your company's environmental image

RECOMMENDED WATER BASED & STRIPPER PRODUCTS

DETERGENTS: BY IMMERSION OR SPRAY



PROMOCLEAN™ TP 1113

Oil & grease removal

GREENWAY"

- Efficiently cleans ALL metals, including very sensitive ones
- High cleaning power even at low concentration
- Non-toxic & no CMR substances



PROMOCLEAN™ DISPER 707

Removal of flux residues

GREENWAY"

- Excellent solubilization of reflowed organic compounds
- Non-foaming
- Excellent cleaning even at low concentration



PROMOCLEAN™ DISPER 10

Oil removal

GREENWAY"

- Efficiently cleans ALL metals, including very sensitive ones
- Protects temporarily ferrous alloys against corrosion after cleaning
- Can be used in production & maintenance

STRIPPERS & DEOXIDATION



PROMOCLEAN™ TP 186B

Removal of varnish, resins, paints, glues, inks & lacquers by immersion or co-solvent process

GREENWAY"

- Can remove many cured substances in high quantity
- Efficient from ambient temperature to 80° C
- Long bath-life: can be filtered & re-used



PROMOCLEAN™ TP 178

Removal of oxides, minerals residues & diamond polishing by immersion process

GREENWAY"

- Substitute of phosphoric acid-based cleaners
- High chelating power, reducing lime deposits
- Compatibility with most metals, including sensitive ones

Non-exhaustive list of cleaning products. INVENTEC assists you in the study of the compatibility of pollutants with the product and in the process definition adapted to your needs.



PROCESS CONTROL ANALYSIS KIT FOR PROMOCLEAN™ TP & DISPER RANGES

With the PCA kit, the **bath concentration can be measured** and so can be adjusted rapidly if needed. Handling and regularly checking the cleaning process guarantees the straight-line cleaning **quality**, **smooth production**, and **preventive** of the cleaning bath.

BENEFITS:

- Around 50 measures can be done with PCA KIT
- Simple and fast method, changing color chemical reaction
- Space-saving equipment to measure the concentration of a PROMOCLEAN™ bath



GreenwayTM

THE WAY WE THINK, THE WAY WE ACT



In 2012, Inventec launched Greenway[™] in order to steer new development to more green products.

10 years later, Greenway $^{\text{TM}}$ evolved to classify each CLEANING product related to their HSE impact.

Inventec made it easier to compare products!

To evaluate the impact, the following product indicators are taken into account:

INDICATORS ON HUMAN HEALTH

- flammability
- toxicity
- corrosivity
- risks of raw materials

INDICATORS ON ENVIRONMENT PROTECTION & RESSOURCES MANAGEMENT

- water consumption
- energy consumption
- source / origin of raw materials
- waste management
- emissions reduction (VOC, GWP)
- recyclability of the product & packaging
- circular economy possibilities: with the **ECOPROGRAM**
- consumption of other consumables
- comparison of processes

Indicators are translated in percentage with crossed reference data. The data taken into account to calculate the impact score are based on the product MSDS, industrial expertise & European legislations.



A GREENWAY" PRODUCT HAS LESS THAN 33% OF IMPACT

Immersion cooling

OUR EXPERTISE IN COOLING FOR THE AUTOMOTIVE INDUSTRY

Electronic or electrical devices in use creates heat & **needs to be cooled to avoid malfunction**. Inventec with its **experience in non electrically conductive fluids** developped an IMMERSION COOLING FLUIDS range.

Key paramaters are taken into account, such as:

- Heat transfer effectiveness
- Electrical Insulating Properties
- Safety & environmental consideration

OUR BRAND IN IMMERSION COOLING



THERMASOLV[™] IMMERSION COOLING FLUID RANGE

Dielectric coolants are fluorinated solvents for both single phase cooling & two phases cooling.

FLUIDS



THERMASOLV[™] IM1

Fluorinated solvents

- Excellent thermodynamic properties, high stability
 - Compatible with most materials
 - No flash point, non corrosive, no CMR or hazardous compounds



THERMASOLV[™] IM2

Fluorinated solvents

- Excellent thermodynamic properties, low viscosity
- No REACH substance restriction, very low GWP
- No flash point, non corrosive, no CMR or hazardous compounds



Coating

OUR EXPERTISE IN COATING FOR THE AUTOMOTIVE INDUSTRY

To extend the life-time of your electronic assembly and protect it against harsh environments they operate in, coating is a valuable option.

They can also provide **additional mechanical strength** to the assembly by absorbing vibrations.

OUR BRAND IN COATING



PROMOSOLV[™]COAT ULTRA-THIN COATING RANGE

Ultra-thin coating range developed to protect electronics or other substrates with an easy, fast & environmental friendly process.

OUR PARTNER BRANDS IN COATING



ABchimie's conformal coatings are great PCB protection solutions, especially developed with sustainability in mind.



3M[™] Novec[™] coating range are ultra-thin coatings for electronics.

RECOMMENDED COATING PRODUCTS



PROMOSOLV[™] COAT UT10

Clear transparent hydrophobic and oleophobic ultra-thin coating

- Very flexible and optical clear film
- Fast drying at room temperature (<1 min)
- Non-flammable & Low environmental impact



3M[™] Novec[™] 2704

Transparent ultra-thin hydrophobic & oleophobic coating

- Exceptional repellence of all kind of liquids
- Fast drying at room temperature (<1 min)
- Non-flammable & Low environmental impact



ABchimie[™] 746E UV LED

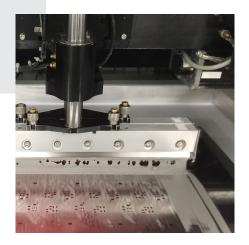
Conformal coating cured by UV LED, applied by brush, spray or selective coating machines

- Non flammable & no VOC
- Very flexible film, no cracks
- Fast & cost effective curing by UV LED

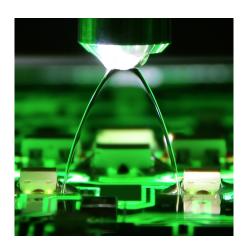
Non-exhaustive list of coating products. Let INVENTEC assists you to customize the best product adapted to your need.

Compatibility

A WORRYLESS ALL-IN-ONE SOLUTION







Inventec is unique on the market, providing its own developed compatible solutions in Soldering, Cleaning & Coating.



Whatever your needs or requirements, Inventec has a tailor-made solution to offer you. Needless to say that talking to one supplier who understands very well these three processes is more efficient in order to achieve the desired outcome at the lowest cost of ownership.



Technical support & product trials

FINDING THE BEST SOLUTIONS WITH OUR EXPERTS

Inventec has a worldwide dedicated Technical Support team to help you along the different stages of our partnership.

Depending on you request, we provide online or onsite support:

- to select the right product based on your specific needs,
- to assist you in your **product qualification process**,
- to guide you with the initial **set up of you process** at all your worldwide manufacturing facilities,
- to provide **fast response on technical issues** which could occur at any time during mass production.

Talking to our Technical Team, who are experts in soldering, cleaning & coating materials, will help you greatly to **overcome technical challenges within your overall process.**

Customers are also welcome in our CLEANING CENTERS to see the process in action and to get convinced by our solutions. We cover water and solvent-based processes.



OUR MEMBERSHIPS TO STRENGTHEN OUR INDUSTRY KNOWLEDGE



























Our partners









They support us

Inventec is one of the **110 laureates of the France Relance automotive** & aeronautical modernization funds in 2020.

By being part of laureates, Inventec developed its **FLUSHING NET** project:

- set up of a **flushing cleaning line** at Inventec France,
- creation of a **laboratory dedicated to particle counting** in order to validate cleaning effectiveness,
- optimization of the **recycling process** in order to minimize flushing fluid consumption and improve the sustainability of the process.

The project will be operational early 2022.





INVENTEC WORLDWIDE

○ 6 PRODUCTION SITES ● 9 SUBSIDIARIES • WORLDWIDE NETWORK



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