



Solutions for the **AUTOMOTIVE INDUSTRY**

SOLDERING • CLEANING • COATING • COOLING

INVENTEC
PERFORMANCE CHEMICALS
INSPIRING INNOVATION



SPECIFIC
PROCESS



EXCELLENT
COMPATIBILITY



OPTIMIZE
PROCESS



ENVIRONMENTALLY
FRIENDLY

INVENTEC, A DEHON GROUP COMPANY

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



Dehon group companies:

SMB AUTO

Car care solutions
& services

climalife®

Refrigeration, air
conditioning & heating

matelex
connected refrigeration

Leak detection & energy
for refrigeration

SODEREC
INTERNATIONAL

High-risk chemicals

INVENTEC
PERFORMANCE CHEMICALS

Soldering, Cleaning, Coating
& Cooling solutions

PUS
Pure
Ultrasonic
Systems

Powder, atomizer &
sieving activities

crealis

Custom filling & packing

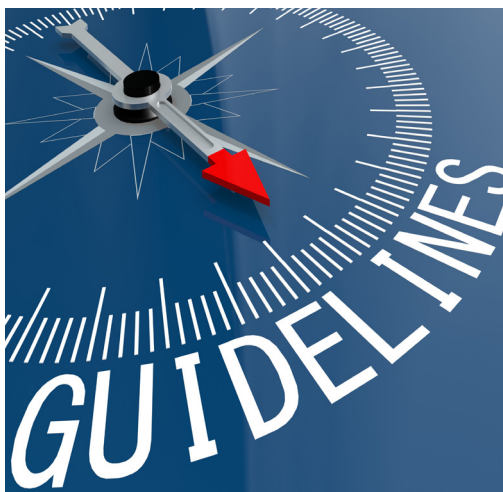
750 collaborators worldwide: 13 subsidiaries in 3 continents

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 High Reliability applications and minimizing **environmental & health impact** at the core of our product development. **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 find the right solution 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

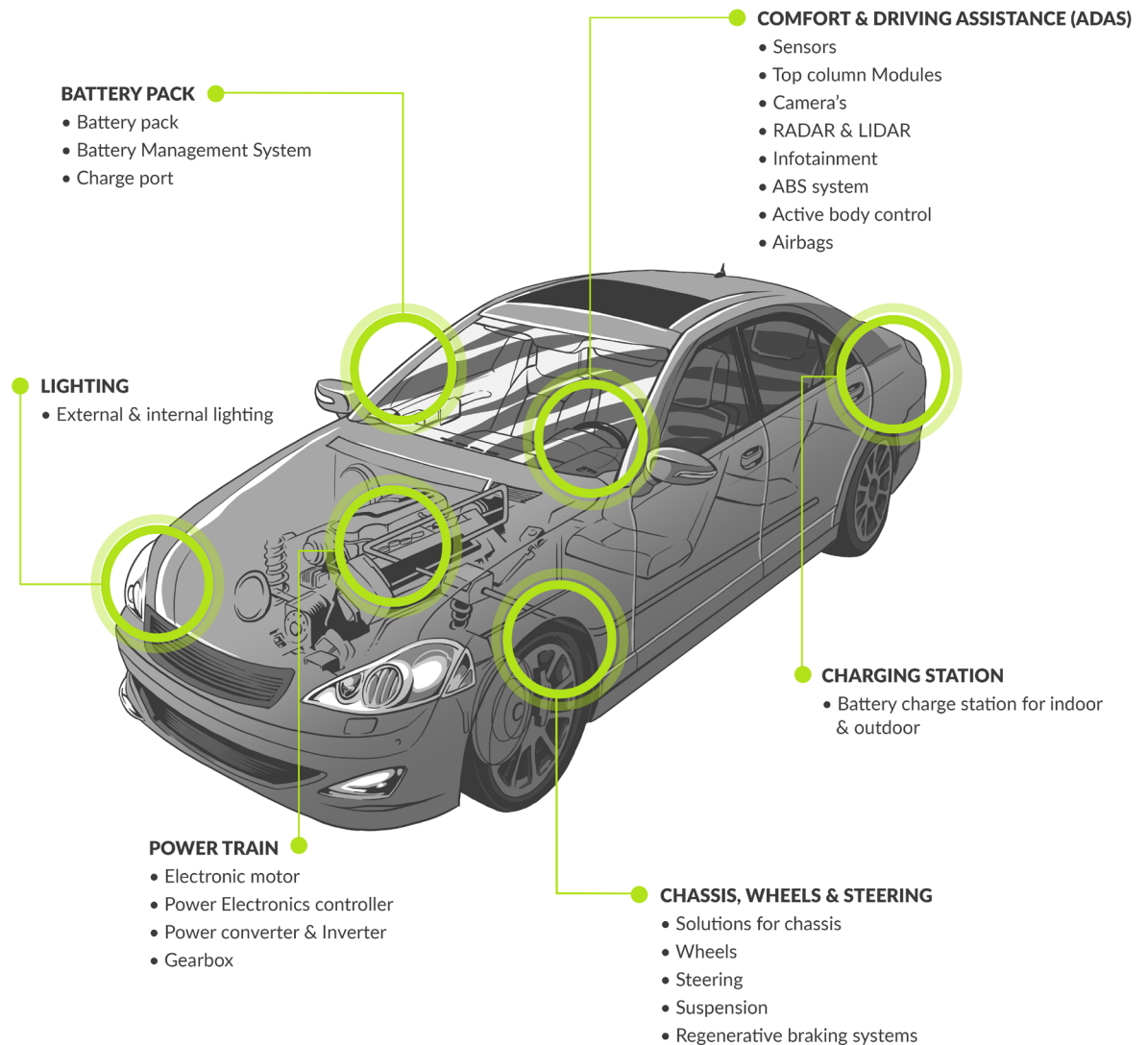
PROTECTION

friendly solutions for health & environment

OUR EXPERTISE DEDICATED TO THE AUTOMOTIVE INDUSTRY

Because of its **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 & cooling 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



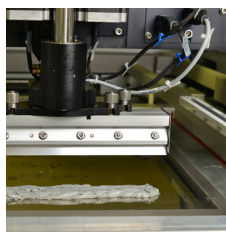
Soldering

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**.

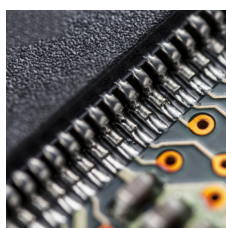
Our soldering product formulations have been **free of halogen for over 15 years** and some products show very low solder voids on large area components. With our specific test method: the Bono Corrosion Test, which is an alternative to the SIR test, we can guarantee a high chemical reliability of solder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

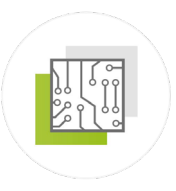


ECOFREC™ SOLDER FLUX RANGE

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

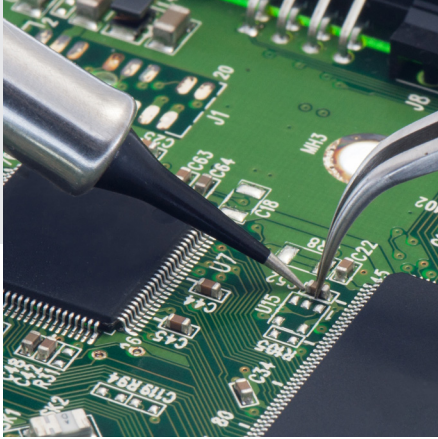
APPLICATION	SEGMENT
SMT ASSEMBLY	POWER TRAIN
WAVE & SELECTIVE SOLDERING	ADAS (COMFORT & DRIVING ASSISTANCE)
REPAIR & REWORK	LIGHTING
	CHARGING STATION
	BATTERY PACK





Soldering

RECOMMENDED SOLDERING PRODUCTS

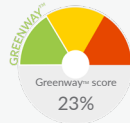


SOLDER PASTES

ECOREL™ FREE 305-16LVD

SAC305 lead free alloy

GREENWAY **NEW**

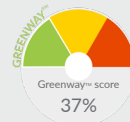


- No clean SMT printing process
- Low voiding to offer excellent heat dissipation
- Very good wetting on all surface finishing, including OSP

ECOREL™ HTO-16LVD

High Reliability lead free alloy

Low voiding

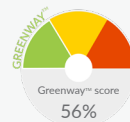


- Alloy with improved thermal fatigue resistance
- Low voiding to offer excellent heat dissipation
- Very good wetting on all surface finishing, including OSP

LIQUID SOLDER FLUXES

ECOFREC™ 210

Alcohol based, no clean solvent based flux, high reliability

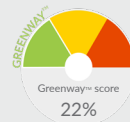


- Excellent wettability & through-hole penetration
- Very high SIR values
- Very clean boards due to lowest residue levels

ECOFREC™ 320

Waterbased, no-clean liquid flux

GREENWAY **VOC FREE**



- 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.



Cleaning

OUR EXPERTISE IN CLEANING FOR THE AUTOMOTIVE INDUSTRY

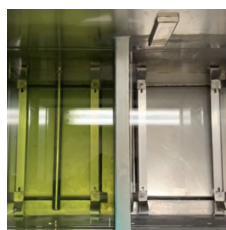
Inventec's expertise on precision cleaning has led to a wide range of cleaning products for both **mechanical and electronic applications**.

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

- Before underfill for better adhesion performance
- 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 without damaging internal and external structure of the parts**. It can be in interoperation or in surface treatment.

OUR BRANDS IN CLEANING



TOPKLEAN™

HYDROCARBON CLEANING RANGE

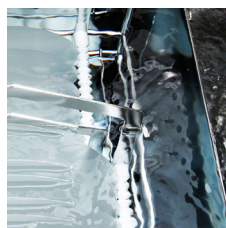
Cleaning fluids dedicated for co-solvent system or as a single solvent in vacuum cleaning process.



PROMOSOLV™

SOLVENT CLEANING & DRYING RANGE

Solvent based cleaning fluids for vapor phase cleaning process or used as rinsing agent in co-solvent systems. Also products for spotless solvent drying process.



PROMOCLEAN™

DETERGENT CLEANING RANGE

Cleaning fluids for water-based immersion or spray processes.



QUICKSOLV™

FAST EVAPORATING SOLVENT RANGE

Fast evaporating solvents for cleaning at ambient temperature. Mainly used for manual cleaning.

OUR PARTNER BRAND IN CLEANING

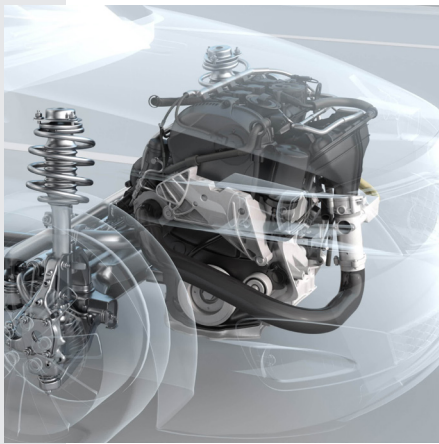


Inventec is an authorized distributor & formulator of 3M™ Novec™ fluids for precision cleaning applications. 3M™ developed the Hydrofluoroethers (HFE), which is still today considered as the best solvent in terms of safety, sustainability and ease of process implementation.



Cleaning

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	✓	✓	✓	✓	✓
OIL & GREASE REMOVAL FROM IRON PARTS	POWER TRAIN	✓	✓	✓	✓	✓
	CHASSIS, WHEELS & STEERING	✓	✓	✓	✓	✓
MAINTENANCE CLEANING FOR MECHANICS	ALL SEGMENTS	✓	✓	✓	✓	✓
PCB DEFLUXING	POWER TRAIN	✓	✓	✓	✓	✓
	BATTERY PACK	✓	✓	✓	✓	✓
	CHARGING STATION	✓	✓	✓	✓	✓
	ADAS (COMFORT & DRIVING ASSISTANCE)	✓	✓	✓	✓	✓
MAINTENANCE CLEANING FOR ELECTRONICS	ALL SEGMENTS	✓	✓	✓	✓	✓

✓ 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

Cleaning

RECOMMENDED SOLVENT-BASED PRODUCTS

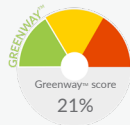


CO-SOLVENT

TOPKLEAN™ EL 20P

Removal of flux residues

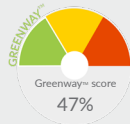
GREENWAY **NEW**



- 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

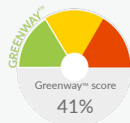


- Sustainable alternative to perchlorethylene & nPB
- Excellent compatibility with all metals, glasses, ceramic & many plastics
- Rinsing fluid is constantly recycled, limiting consumption

VAPOR

PROMOSOLV™ 70

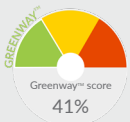
Degreasing & dewaxing



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

PROMOSOLV™ 70ES

Removal of flux residues

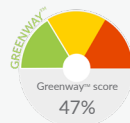


- Thermally and chemically stable in use
- Non-flammable
- Can be recycled: **ECOPROGRAM**

VACUUM

TOPKLEAN™ MC 1153

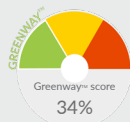
Oil removal, degreasing & decontamination



- 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

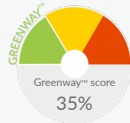


- Thermally and chemically stable in use, so no need of using an additive
- Excellent solubility of hydrocarbon oils & greases
- No Ozone Depletion Potential & no Global Warming Potential (GWP)

MANUAL

QUICKSOLV™ DEF 70

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



Cleaning

RECOMMENDED WATER BASED PRODUCTS

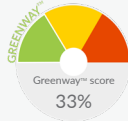


DETERGENTS: BY IMMERSION OR SPRAY

PROMOCLEAN™ TP 1113

Oil & grease removal

GREENWAY

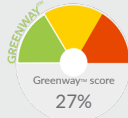


- Efficiently cleans ALL metals, including very sensitive ones
- High cleaning power even at low concentration
- Non-toxic & no CMR substances

PROMOCLEAN™ DISPER 707

Removal of flux residues

GREENWAY

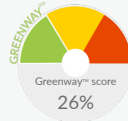


- Excellent solubilization of reflowed organic compounds
- Non-foaming
- Excellent cleaning even at low concentration

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

GREENWAY

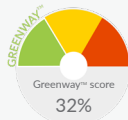


- Can remove many cured substances in high quantity
- Efficient from ambient temperature to 80° C
- Long bath-life: can be filtered & re-used

PROMOCLEAN™ TP 178

Removal of oxides, minerals residues & diamond polishing paste

GREENWAY



- Substitute for 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 WATERBASED CLEANERS

With the PCA kit, the **bath concentration can be easily measured** and as such can be adjusted quickly if needed. Regularly checking the cleaning process guarantees a **stable quality and smooth production**.

BENEFITS:

- Around 50 measures can be done with one PCA KIT
- Simple and fast method by color changing chemical reaction
- Space-saving equipment always close at hand.

Greenway™

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™ evolved to **classify each product related to their HSE impact.**

GREENWAY™ SCORE

GUIDES YOU
TOWARDS THE MOST
SUSTAINABLE SOLUTION

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

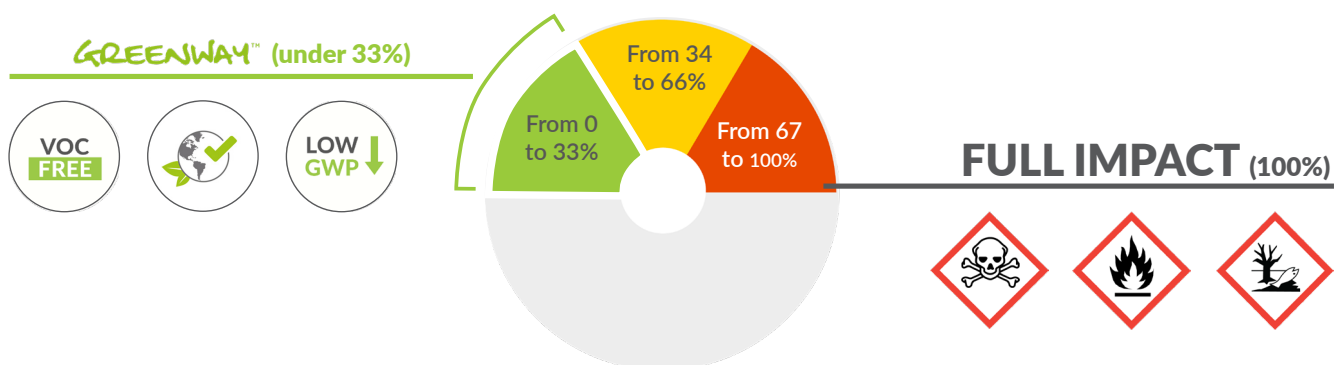
INDICATORS ON HUMAN HEALTH

- 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 and **need to be cooled to avoid malfunction**. Inventec with its **experience in non electrically conductive fluids** developed an IMMERSION COOLING FLUIDS range to tackle today's needs for EV development.

Key parameters are taken into account, such as:

- Heat transfer effectiveness
- Electrical Insulating Properties
- Safety & environmental consideration
- Compatibility with materials

OUR BRAND IN IMMERSION COOLING



THERMASOLV™ IMMERSION COOLING FLUID RANGE

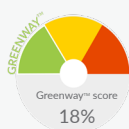
Dielectric cooling fluids for both single phase & two phases immersion cooling.

FLUIDS

THERMASOLV™ IM1

Dielectric heat transfer fluid

GREENWAY

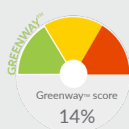


- Excellent thermodynamic properties, high stability
- Compatible with most materials
- No flash point, non corrosive, no CMR or hazardous compounds

THERMASOLV™ IM2

Dielectric heat transfer fluid

GREENWAY



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

HIGH PERFORMANCE
SUSTAINABLE
SAFE



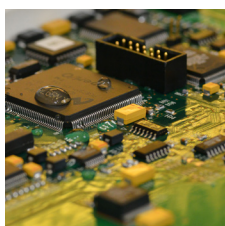
Coating

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.

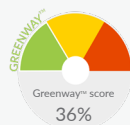


3M™ Novec™ coating range are ultra-thin coatings for electronics.

RECOMMENDED COATING PRODUCTS

PROMOSOLV™ COAT UT10

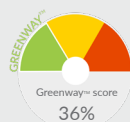
Transparent hydrophobic and oleophobic ultra-thin coating



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

3M™ Novec™ 2704

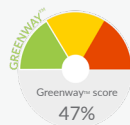
Transparent hydrophobic and oleophobic ultra-thin coating



- 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

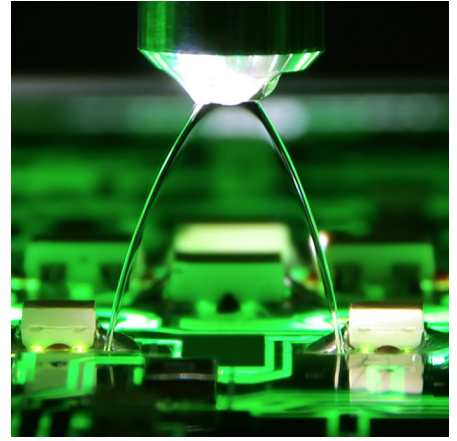
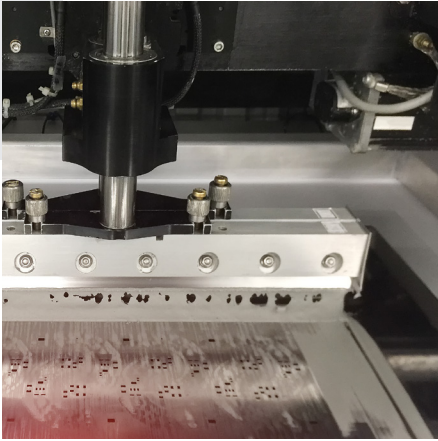


- Non flammable & no VOC
- Very flexible film, no cracks
- Fast & cost effective curing by UV LED

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 own developed solutions in Soldering, Cleaning & Coating. Made to be compatible which each other for an easy and worryless process implementation.

Our solder paste flux residues can be easily removed with our cleaners

CLEANING

TOPKLEAN™
PROMOSOLV™
PROMOCLEAN™
QUICKSOLV™
3M™ NOVEC™
BLUEGOLD™
M-AERO™

Recommended to clean before coating to get optimal adhesion and to remove other unwanted contaminations on the PCB



SOLDERING

ECOREL™
ECOFREC™
AMTECH™

Most of our solder paste flux residues are compatible with our coatings and don't influence SIR or BONO reliability test outcome

COATING

PROMOSOLV™ COAT
ABCHIMIE™
3M™ NOVEC™

Whatever your needs or requirements, Inventec has a tailor-made solution for 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 your request, we provide online or onsite support:

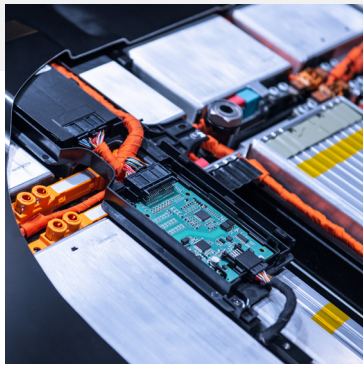
- To select the right product **based on your specific needs**,
- To assist you in your **product qualification process**,
- To guide you with the initial **set up of your process** at all your worldwide manufacturing facilities,
- To provide **fast response on technical issues** which could occur at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



INVENTEC WORLDWIDE

6
PRODUCTION SITES

10
SUBSIDIARIES

WORLDWIDE
DISTRIBUTOR
NETWORK



EUROPE

INVENTEC Performance Chemicals

Head Quarter, Sales office and production facility

26 rue des Coulons - BP 27
94363 Bry-sur-Marne cedex / France
Tel: +33 1 43 98 75 00
Email: info_france@inventec.dehon.com

INVENTEC Switzerland

Production site & Sales office

Z.I, Petits Champs 15
1400 Yverdon-les-Bains
Tel: +41(0) 24 424 80 90
Email: info.ch@inventec.dehon.com

INVENTEC Germany

Sales office

Robert-Bosch-Strasse 14
D-40668 Meerbusch
Tel: +33 (0)6 11 95 98 86
Email: info_germany@inventec.dehon.com

INVENTEC Spain

Sales office

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