

Inspiring Innovation

The background of the slide is a composite image. The upper half shows a space shuttle launching from Earth, with a large plume of fire and smoke. The lower half shows the cockpit of a commercial airplane, with two large windows and a green instrument panel. A green curved banner is overlaid on the right side of the image.

INVENTEC Aerospace & Defense Market

An organization with a dedicated approach,
close to its customers.

1	DEHON Group and INVENTEC Performance Chemicals	3
2	INVENTEC and its partners	4
	The Electronics inside INVENTEC	5
3	Soldering pastes	6
	Soldering fluxes	7
	Solvents Vapour Phase Application	8
	Solvents Vacuum Application	11
	Solvents Manual Application	12
	Detergents Applications by Immersion or Spraying	15
	Strippers	17
	Coatings	18
4	Services	19
5	Greenway Environmental Approach	22
6	Regulations	23

Inventec is part of the Dehon group. The group is a family company created in 1874, first specialized in the filling and distribution of refrigerants.

Inventec, a company of the Dehon Group

Today, the group with its 4 companies is dedicated to:

- Refrigeration, air conditioning and heating with Climalife;
- Car care with SMB auto;
- High Performance Chemistries with Inventec;
- High-risk chemicals with Soderec International.

Because of its products technical performance, its market responsiveness and its continuous research for sustainable solutions, the Dehon group is leader on these 4 markets in Europe, Asia and North-America.

The Dehon group generated a 190 million Euros revenue in 2015 and employs with more than 500 employees in 4 continents (*Africa, Americas, Asia, Europe*).



climalife[®]



INVENTEC
PERFORMANCE CHEMICALS



INVENTEC Performance Chemicals

Inventec proposes products and services for: electronic assembly, precision cleaning, surface treatment, formulation of foams and aerosols for chemical and pharmaceutical synthesis.

These applications are dedicated to a wide range of industries: aeronautics, automotive, electronics, food processing, energy, medical, pharmaceutical and optical industries.

Inventec is one of the leading companies in chemical innovations and in sustainable applications of these innovations protecting health and the environment.

Over 3 000 substitutions of chemicals have been accomplished in highly technical processes in Europe, Asia and North America.

Substitutions were done in areas as diverse as the cleaning of luxury watches, decontamination of liquid oxygen pipes in the aeronautics industry, lead-free soldering, foam expansion, aerosol formulation etc...

All these substitutions allowed to reduce considerably the risks linked to products and their use.

INVENTEC's figures

100 employees
1/3 are engineers

40 years
of expertise in high tech markets

65 million
Euros revenue in 2015

50% of the revenue
generated outside of France

+10% of the revenue
is invested in research & development

Our positioning

- **Formulation:** experts in the markets of Aerospace and Defense to meet your requirements.
- **Provider of solutions:** processes, products, applications, monitoring, diagnostics, analysis.



- **Creating value:** **regulatory monitoring** is crucial in our business; we attach daily attention to guide our clients towards **sustainable solutions**. Tests, pre-qualifications, training, integrated monitoring and Ecoprogram.

Our skills and our business

- **Processes:** Vapor Phase, Spraying, Immersion, Flushing, Vacuum, Manual.
- **Products:** fluorinated solvents, modified alcohols, A3 hydrocarbons, detergents, strippers and coatings.
- **Applications:** degreasing, oil removal, decontamination, pollution control, stripping.

Our guidelines

- **Proximity:** 3 R & D laboratories, 8 production sites, 11 subsidiaries + 12 distributors **across 4 continents**.
- **Performance:** specialized teams and effective technical solutions to serve our customers.
- **Protection:** **friendly solutions for users and the environment.**

Our partners



For over 50 years, 3M™ has been providing fluorinated fluids for applications, among other, of precision cleaning to sensitive markets such as aerospace, defense and electronics. In the early 90's 3M™ developed the Hydrofluoroethers (HFE). Complying to environmental regulatory requirements, the

range of fluids 3M™ Novec™ - with no impact on the ozone layer and with low Global Warming Potential - benefit of qualifications in the aerospace market. These fluids are now a set of solutions which remains unequalled from the point of view of the performance, safety and the environment.



A range of detergents with more than 80 qualifications and homologations for Aeronautics,

Space and Military. Versatile products which may be used in various aqueous process and compatible with a wide range of materials and contaminants.



The Blue Gold range from **Modern Chemical Inc.** offers a very versatile solution and can be used in various applications.

Blue Gold is currently used for cleaning in the context of maintenance of aircraft engines, oxygen-sensitive applications, in cleaning ferrous and nonferrous metals, plastics, rubbers, and many other applications.

Closer to its customers, an organization and a dedicated approach.

The Electronics inside INVENTEC

Inventec Electronics is specialized in developing, manufacturing and commercializing **soldering**, **cleaning** and **coating** products for the assembly of printed circuit boards and semiconductors in high technology industries.

The main covered markets are automotive, aerospace, and energy - including solar and LED lighting markets. Our materials deliver a balanced added value involving **reliability**, **compatibility** and **sustainability**; key elements for high tech electronics.

Solder pastes and Soldering fluxes

ECOREL™ Solder pastes

INVENTEC's solder pastes meet the increasing number of challenges in the electronics industry due to the evolution of technology, and of new regulations.

Halogen free, lead free, embedded technologies, hybrid assembly, miniaturization, and other requirements are covered by the Ecorel™ range:

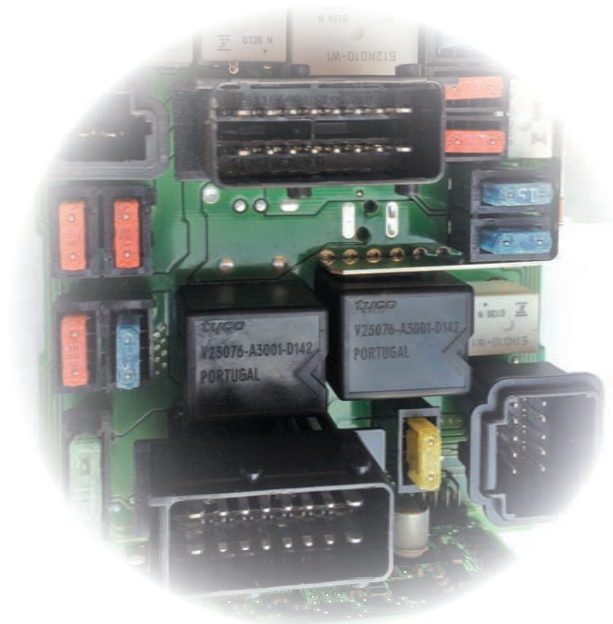
- Chemical reliability of residues after reflow
- Thermal cycling performance
- Compatibility with Conformal Coating in No Clean processes
- Robust assembly process
- Performance improvement in production/Minimization of defaults

Our Core Brands

PROMOCLEAN™
TOPKLEAN™

ECOREL™
ECOFREC™

AMTECH



ECOFREC™ Soldering fluxes

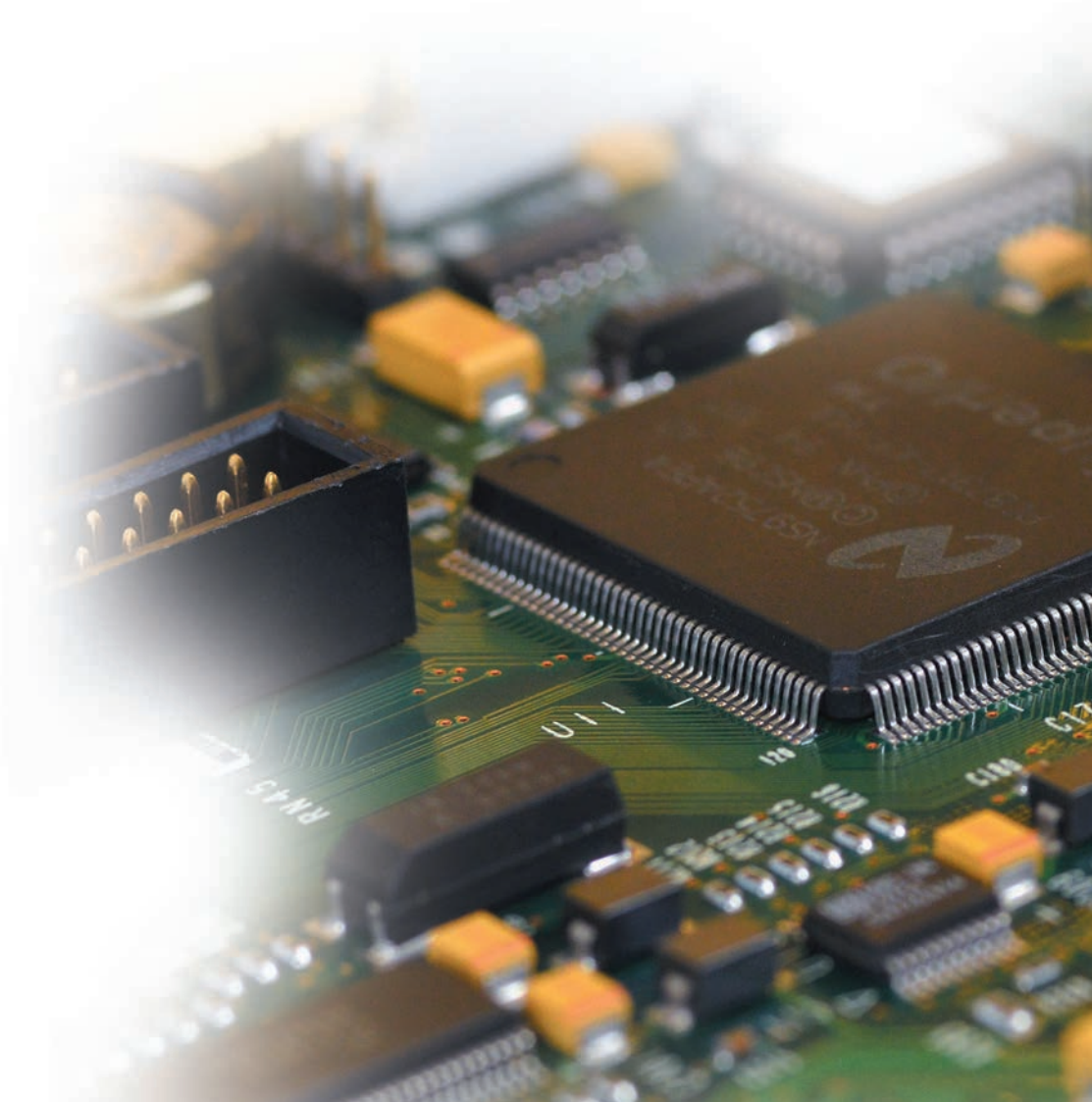
Inventec formulates and offers a wide range of flux for standard wave soldering or selective soldering. Inventec offers resin based flux, with or without cleaning, low residue no-clean fluxes, alcohol or water based.

Soldering

ECOREL™ pastes

INVENTEC'S solder paste references used in aerospace electronics.

Product	Description	Alloy
Ecorel™ Free 387-6D	No clean solder paste with chemically inert residue after reflow, Paste compatible with conformal coatings qualified in the military industry, ie passes both the IPC SIR and BONO tests even after applying a polyurethane conformal coating.	SAC387
Ecorel™ Free 305-21	Chemically inert residue, minimizing the risk of corrosion mechanisms and leakage current. Good compatibility with a large range of conformal coating in the market. BONO corrosion test compliant.	SAC305
Solderel™ DMH 0524	Excellent residue cleanability. Residue must be cleaned. Recommended for defense and aerospace applications.	SnPb36Ag2
AMTECH 4300	Multi-process capabilities, a "No Clean" formula that is also water washable. Compatible with high temperature alloys. Suitable for fine pitch applications. Low solder voids. Halide free.	Sn63Pb37

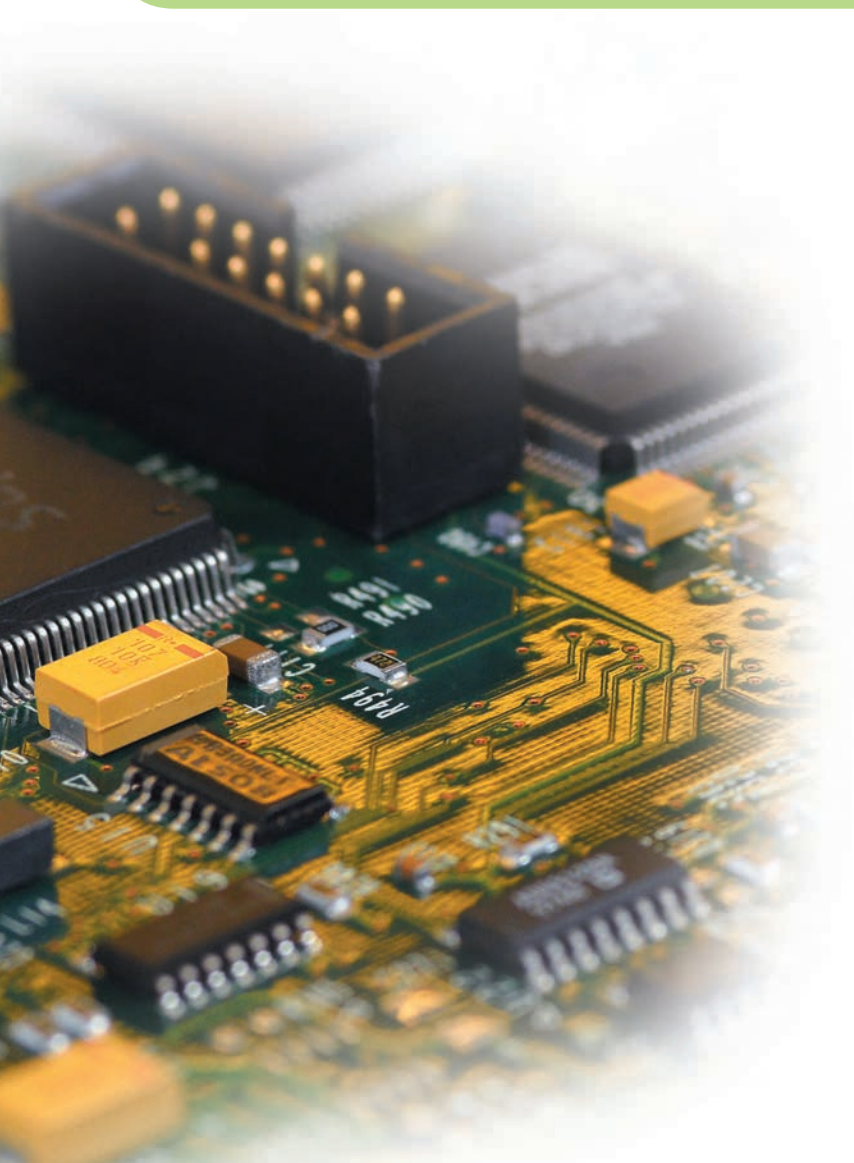


Soldering

ECOFREC™ fluxes

INVENTEC'S solder flux references used in aerospace electronics.

Product	Description	Flux Type
Ecofrec™ 200	Reduced solder balling. Low residue, excellent performance in ICT, no false failure. High reliability, complies with BONO corrosion test.	Alcohol based
Ecofrec™ 202	High SIR values. Good cosmetic aspect residue. Low residues.	Alcohol based
Ecofrec™ 303	High reliability, complies with BONO corrosion test. Good soldering performance on any board finish.	VOC Free
Ecofrec™ CMA 155	Easy to clean flux. Good balance of activation.	Alcohol based
Ecofrec™ TF48	Tacky flux designed for soldering and rework of components. For leaded and lead free ball attach and BGA repair processes. Excellent printing performance.	Tacky flux



Solvents

Vapor Phase Application

Non flammable, elimination of a variety of pollutants, compatibility with all metals, quick clean, solution without ODP. **Replace halogenated and chlorinated solvents.**

PURE and AZEOTROPIC solvents

Product	Characteristics	Chemical Nature	Boiling Temperature	Application method
3M™ Novec™ 7100	Non-flammable: cleans, removes particles, dust, fine oils, wax and some silicones	Hydrofluoroether	61° C	Vapor phase machines
3M™ Novec™ 7200	Non-flammable, cleaning and rinsing fluid for vapor phase degreasing of particles, fine oils and fluoropolymers	Ethoxy-nonafluorobutane	76° C	Vapor phase machines
Promosolv™ 41M	Non-flammable. Degreases: heavy oils, greases, defluxing, waxes, varnishes, particle and fluorinated lubricants elimination	3M™ Novec™ 7100 + 1,2 TDE + Pentafluorobutane	38 - 39° C	Vapor phase machines, cleaning contact by spraying and heat transfer



PURE and AZEOTROPIC solvents

Product	Characteristics	Chemical Nature	Boiling Temperature	Application method
Promosolv™ 70	Non-flammable, degreases heavy oils, greases, waxes, varnishes, particle and fluorinated lubricants	3M™ Novec™ 7100 + 1,2 TDE	43° C	Vapor phase machines, cleaning contact by spraying and heat transfer
Promosolv™ 90C	Non-flammable, degreases heavy oils, greases, waxes, varnishes, particle and fluorinated lubricants	3M™ Novec™ 7100 + 1,2 TDE + Pentafluorobutane	43° C	Vapor phase machines, cleaning contact by spraying and heat transfer
Promosolv™ NDE	Non-flammable, degreasing fluid and oil removal of heavy oils, dewaxing and defluxing, eliminates fluorinated lubricant particles, light oils and fluoropolymers	Pentafluorobutane 3M™ Novec™ 7100 + 1,2 TDE	40° C	Vapor phase machines and cleaning contact by spraying
3M™ Novec™ 71DE	Non-flammable, degreasing, stripping, rinsing and drying fluid	3M™ Novec™ 7100 + 1,2 TDE	41° C	Vapor phase machines
3M™ Novec™ 72DE	Non-flammable, degreasing, stripping, rinsing and drying fluid	3M™ Novec™ 7200 + 1,2 TDE	43° C	Vapor phase machines
3M™ Novec™ 71IPA	Non-flammable, light cleaning fluid, removes dust, fine oils and fingerprints	3M™ Novec™ 7100 + isopropyl alcohol	55° C	Vapor phase machines

Solvents

Vapor Phase Application

Co-Solvents Mixed and Separated

Product	Characteristics	Operating Temperature		Flash Point		Application Method
		Mixed	Separated	Mixed	Separated	
Topklean™ MC 1153	3M™ Novec™ 7100 Degreasing fluids and oil removal of heavy oils, eliminate particles, fluorinated lubricants, light oils and fluoropolymers	68° C	≤ 49° C	NA	64° C	Vapor phase machines. Compatibility with Co-Solvent or Vapor phase machines with independent tank of the vapor phase for the use of Topklean™ only
Topklean™ MC 20A		66° C	≤ 49° C		64° C	
Topklean™ MC 1007		68° C	≤ 82° C		97° C	
Topklean™ EL 20A		≤ 66° C	≤ 50° C		65° C	
Topklean™ MC 1153	3M™ Novec™ 711PA	68° C	≤ 49° C	NA	64° C	
Topklean™ MC 20A		66° C	≤ 49° C		64° C	
Topklean™ MC 1007		68° C	≤ 82° C		97° C	
Topklean™ EL 20P		≤ 70° C	≤ 50° C		62.5° C	



Solvents

Vacuum Application

Energy savings and operating cost, the vacuum leads to a reduction of the boiling point of the solvent.

Flammability is under control, the vacuum eliminates oxygen so there is no combustion.

Low consumption thanks to the separation of pollution and solvent.

Product	Characteristics	Chemical Nature	Concentration	Operating Temperature	Flash Point
Topklean™ MC 20D	Degreasing and removal of soluble and non-soluble oils, greases and fingerprints	Modified alcohol	Pure	~ 70° C	≥ 64° C
Topklean™ MC 25		Modified alcohol	Pure	~ 70° C	≥ 64° C
Topklean™ MC 1153	Degreasing fluid eliminates whole oils	Hydrocarbon	Pure	~ 70° C	64° C
Topklean™ Organic		Agro Solvent	Pure	~ 70° C	65° C
Topklean™ EL 20D	Specially formulated for applications of flux elimination	Modified alcohol	Pure	~ 70° C	≥ 64° C



Solvents

Manual Application

Their low surface tension and rapid evaporation provide remarkable cleaning quality.

They are colorless, have a low viscosity and are almost odorless.

They effectively replace solvents with potential for destruction of the ozone layer, highly toxic, high GWP or highly flammable.

Product	Characteristics	Chemical Nature	Application method	Flash Point
Quicksolv™ 1	Cold degreasing fluid	Hydrocarbon	Pulverization by spraying	-
Quicksolv™ 25	Degreasing fluid for oils and greases	Hydrocarbon	Manual or immersion	> 29 °C
Quicksolv™ DMC	Cold degreasing fluid	Hydrocarbon	Manual or immersion	-
Quicksolv™ DEF 90	Non-flammable, cold degreasing and drying fluid for oils heavy, greases, flux, waxes, particles, fluorinated lubricants light oils and fluoropolymers	Novec™7100 + 1,2 TDE	Manual or immersion without US	-
Topklean™ MC 105	Dewatering fluid, displaces water from the surfaces of parts, prevents oxidation and corrosion and facilitates subsequent final operations of drying	Hydrocarbon	Manual, immersion or spraying Temperature ≤ 40 °C	60 °C
Topklean™ MC 1007	Cleaning fluid for dried or cracked grease and polishing pastes, with temporary protection properties	Hydrocarbon	Manual or by immersion Temperature ≤ 70 °C	97 °C

Product	Characteristics	Chemical Nature	Application method	Flash Point
Topklean™ 1107	Effectively eliminates all lubricant residues as well unmolding sludge and machining chips	Hydrocarbon	Manual or by immersion Temperature ≤ 40 °C	60 °C
Topklean™ MC 1153	Degreasing fluid eliminates whole oils	Hydrocarbon A3	Manual or by immersion Temperature ≤ 45 °C	64 °C
Promosolv™ 70	Non-flammable, degreases heavy oils, greases, waxes, varnishes, particle and fluorinated lubricants	3M™ Novec™ 7100 + 1,2 TDE	Manual + US	-
3M™ Novec™ 7100	Non-flammable, cleans, removes particles, dust, fine oils, wax and some silicones	Methoxynonafluorobutane	Manual + US	-
3M™ Novec™ 71DE	Non-flammable, degreasing, stripping, rinsing and drying fluid	3M™ Novec™ 7100 + 1,2 TDE	Manual + US	-
3M™ Novec™ 72DE	Non-flammable, degreasing, stripping, rinsing and drying fluid	Ethoxy-nonafluorobutane + 1,2 TDE	Manual + US	-
3M™ Novec™ 71IPA	Non-flammable, light cleaning fluid, removes dust, fine oils and fingerprints	3M™ Novec™ 7100 + isopropyl alcohol	Manual + US	-

Solvents

Manual Application

Product	Characteristics	Chemical Nature	Application method	Flash Point
3M™ Novec™ 72FL	Non-flammable, degreases and cleans light oils, greases and silicones, fluoropolymers, petroleum based solutions, hydraulic fluids, fluorinated lubricants, dust and particles	3M™ Novec™ 7100 + 3M™ Novec™ 7200 + 1,2 TDE	Spray Manual	-
Electrofor 132CZ	Aerosol for fine cleaning without dismantling. Eliminates quickly dirt, oxides, oils, greases, adhesives and other contaminants	Methoxynonafluorobutane + 1,2 TDE	Spray Manual	-
3M™ Novec™ Electronic Degreaser	Non-flammable aerosol for degreasing oils and greases	Ethoxy-nonafluorobutane	Spray Manual	-
3M™ Novec™ Flux Remover	Non-flammable, non corrosive, aerosol for flux elimination during manufacturing, maintenance and fast drying.	Methyl nonafluoroisobutyl ether + 1,2 TDE	Spray Manual	-
3M™ Novec™ Contact Cleaner	Removes fluorinated oils and greases, light oils and silicones, dust and particulates from sensitive electrical and electronic equipments	Methyl nonafluoroisobutyl ether + Methyl nonafluorobutyl ether	Spray Manual	-



Detergents

by Immersion or Spraying

Liquids and alkaline, for the most part they have been specifically formulated for use in ultrasonic baths or spray to clean all types of contaminants.

Product	Characteristics	Chemical Nature	Standard concentration of use	Operating Temperature	Application method	pH	
						Pure	1%
Promoclean™ TP 1113	Degreasing of polishes and oils	Alkaline	1 - 5%	55 - 60 °C	Immersion or Spraying	12	10.5
Promoclean™ TP 1114	Elimination of polishes and fingerprints	Alkaline	1 - 3%	40 - 70 °C		11	10.1
Promoclean™ TP 1115	Degreasing and cleaning for finishing, remove cutting oil, swarf, dust and fingerprints	Alkaline	2 - 5%	50 - 55°C		11.5	10.3
Promoclean™ TP 1128	Used in preparation before vacuum treatment, for degreasing and removing lapping pastes	High Alkaline	1 - 1.5%	40 - 70 °C		> 13	12.5
Promoclean™ Dewax Plus	Dewaxing and degreasing	Low Acidity	1 - 10%	50 - 70 °C		4,7	< 7
Promoclean™ Disper 2	Mechanical maintenance degreasing with temporary corrosion protection properties	High Alkaline	5 - 20%	40 - 70°C	Spraying	13	11.9
Promoclean™ Disper 6	Inter-operational degreasing with temporary corrosion protection properties	Alkaline	1 - 5%	40 - 50°C		13	11.5
Promoclean™ Disper 10	Mechanical degreasing with temporary corrosion protection properties	Low Alkaline	1 - 5%	40 - 50°C		9,8	9

Detergents

by Immersion or Spraying

A very low surface tension gives them exceptional cleaning properties.
Most products in the range contain particularly efficient corrosion inhibitors.

Product	Characteristics	Chemical Nature	Standard concentration of use	Operating Temperature	Application method	pH	
						Pure	1%
Promoclean™ Disper 15	Detergent BORATE FREE for degreasing with protective anticorrosion properties	Low Alkaline	1 - 3%	40 °C and 50 - 75 °C	Immersion or Spraying	9.9	9.2
Promoclean™ DISPER 607	Detergent for fl ux elimination with low VOC, no foaming	Alkaline	25 %	50 - 60° C		10.6	-
M-AERO	Degreasing of oils and greases	Alkaline	5 - 20%	up to 60 °C		11.7	10.8
M-AERO NS	Degreasing of oils and greases	Low Alkaline	10 - 20%	60 °C		9.1	7.1
M-HP	Degreasing surfaces with various origins of impurities, ideal for high pressure applications	Alkaline	3 - 5%	40 - 70 °C	Spraying	12	-
M-HP2	Degreasing of oils and greases	Alkaline	3 - 10%	> 70 °C	Spraying > 100 bars	11.8	10.9
M-GP	Degreasing and cleaning lenses of polymethylmethacrylate not treated before coating	Alkaline	5 - 20%	60 °C and >	Immersion or Spraying	11.4	11.3
Blue Gold Spray Wash Cleaner	Cleaning parts in contact with oxygen. No residue after drying	Alkaline	2 - 5%	40 - 60°C	Immersion or Spraying	13	11



Strippers

Non-Flammable.

Formulations replacing the solvents with high ODP (Ozone Depletion Potential) or high risk of flammability.

Product	Characteristics	Chemical Nature	Concentration	Operating Temperature		Application method		Flash Point
				Hot	Cold	Cleaning	Rinsing	
Promoclean™ TP 182	Stripper alternative to NEP or NMP	Micro oxygenated emulsion	Pure or diluted	< 54 °C	✓	Immersion or manual application	Rinsing with water or with a solvent	69 °C
Promoclean™ TP 183 No VOC	Non-flammable stripper for organic pollutions as lubricants and resins. Mineral pollution such as dust and graphite	Micro oxygenated emulsion	Pure or diluted	< 119 °C	✓			134 °C
Promoclean™ TP 184	Non-flammable cleaner for a wide range of ink	Micro oxygenated emulsion	Pure or diluted	50 °C	✓		Rinsing with a solvent	> 65 °C
Promoclean™ TP 186B	Non-flammable cleaner for varnish, paint resins and lacquers	Micro oxygenated emulsion	Pure	< 80 °C	✓		Rinsing with water or with a solvent	95 °C
Promoclean™ TP 188	Cleaning and stripping of varnish, lacquers and paints	Micro oxygenated emulsion	Pure or diluted	69 °C	✓			> 84 °C
Quicksolv™ DEF 90	Non-flammable, stripping and cold-drying product for heavy oil, grease, flux, waxes, particles, fluorinated oils, light oils and fluoropolymers	3M™ Novec™ 7100 + 1,2 TDE	Pure	✗	✓	Spraying	Do not require rinsing	-

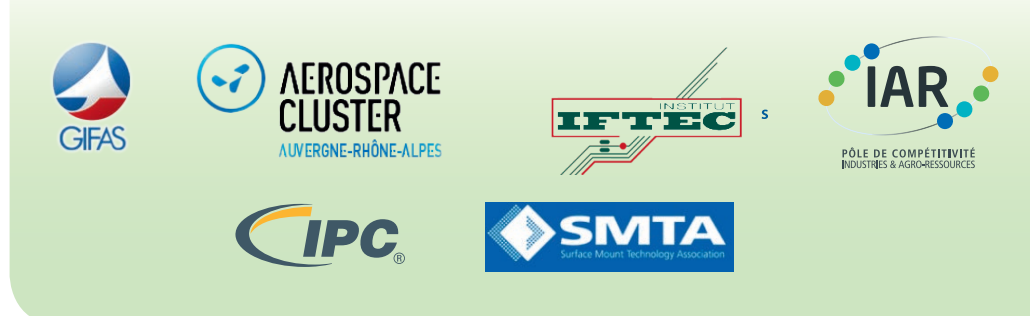
Coatings

Their exceptional covering power, low surface tension, non-flammability and quick evaporation, make them products for film forming, adapted to high tech applications.

Product	Characteristics	Chemical Nature	Solids Concentration	Drying Time	Aspect	Thickness	Type of polymerization
3M™ Novec™ 1700	Low surface tension solutions, they dry to form a protective thin film on a variety of substrates	Fluoroacrylate	2%	5 - 60s	Transparent	0.1 to 1 µm	No curing
3M™ Novec™ 2702		Fluoroacrylate	2%	30 - 90s		0.1 to 1 µm	30 to 90 min from 70 - 150 °C
3M™ Novec™ 2704		Fluoroacrylate + UV tracer	4%	5 - 60s	Transparent, to slightly yellow depending on the thickness	0.2 to 1 µm	No curing
3M™ Novec™ 2708		Fluoroacrylate + UV tracer	8%	5 - 60s		0.5 to 1 µm	No curing

Product	Solid %	Curing	Removable	Permanent	UV Trace
Promosolv™ Coat FR 27100	2%	No	Yes	No	No
Promosolv™ Coat FR 27200	2%	Yes	No	Yes	No
Promosolv™ Coat FR 47200 UV	4%	No	Yes	No	Yes
Promosolv™ Coat FR 87200 UV	8%	No	Yes	No	Yes

Inventec Performance Chemicals member of



Certification :



Adhesion:



Services

Inventec's laboratories perform all the necessary tests and define the product and processes most adapted to your needs.

Process Monitoring and Management

Background of the problem:

- ▶ Statement of the problem
- ▶ Management drift by Inventec technical team

Analysis of the drift:

- ▶ Diagnosis of the condition of the bathroom and the process
- ▶ Sample analyzes
- ▶ Recommendation of the technical solution

Treatment:

- ▶ Implementation of the technical solution with the customer
- ▶ Inventec on site intervention

Laboratory testing and on-site starting

To better meet your specifications, a series of **tests of your pieces** may be needed. Once the stages of your process are defined, we support you in industrial testing for final validation and support you on the start of the process on sites.

Qualitative analyzes of baths

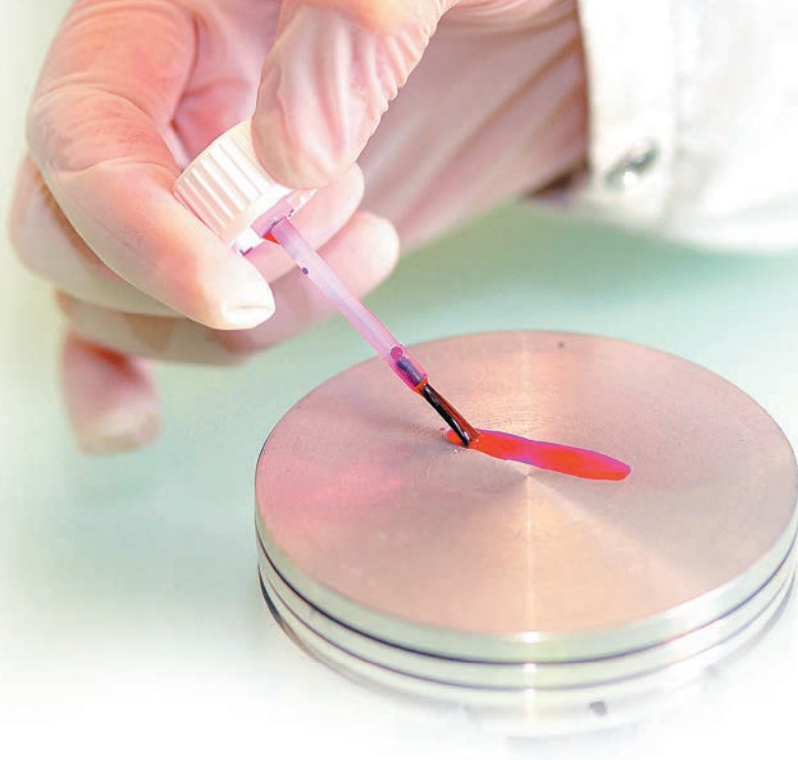
The use of solvents or detergents allows the production to meet performance criteria and reliability.

Improve your production process through analysis:

- **monitor** the quality of a cleaning bath,
- **adjust** the change intervals for process requirements,
- **support** users in managing their processes in case of drift.



An analysis allows to monitor a cleaning bath, in a cost effective manner while protecting the environment.



Equipment for process control

Tools designed to achieve a real time fast evaluation for control of the process.

There are 2 types of analysis tools:

- Detergent PCA Kit recommended for monitoring the concentration of the Promoclean™ range,
- Solvent PCA Kit recommended for the monitoring of baths using Topklean™ Co-solvent range.

Examples of analyzes that can be performed*

Fluid analysis	Process Expertise
Plastic compatibility <i>(ISO 175)</i>	Particle counting
Flash Point <i>(open cup/closed cup)</i>	Distillation curve for oils compatibility
Chlorine content	Vapor pressure curve
DCO	Salin mist
Biodegradability	Hot corrosion test
Halogen content	Metals researches by IPC
Oil concentration <i>(according to internal method of acid cracking)</i>	Thickness measuring of deposits
Bacteriological analysis for detergents	Herbert Test

* List of non-exhaustive analysis

Upon Request,
a member from our technical team can intervene
in case of malfunction of the cleaning process.

PCA KITS PROCESS CONTROL ANALYSIS BY INVENTEC



They allow to verify the correct concentration of the bath and to react quickly to readjust if necessary.

Regular analysis monitoring guarantees a constant **cleaning quality**, an easy Management of the production and a **preventive maintenance of the bath**.

Ecoprogram

Cleaning

Ecoprogram is the downstream phase of controlling the life cycle of cleaning products, with the analysis, recovery and valorization or destruction of the used products.

INVENTEC has implemented a procedure to collect and treat fluorinated solvents. The products are recovered according to the legislation in force and are usually upgraded to increase their lifetime.



GREENWAY

Environmental Approach

Sustainable development requires a continuous effort

During the World Exposition in Shan-ghai, in October 2010, **INVENTEC**, performance chemicals decided to go further and to implement a continuous sustainable development approach.

Label given if 1/3 of **10 PARAMETERS** are improved

- 1 Toxicity:** level defined by GHS classification, but also including the newest aspects, for example the endocrine disruptors
- 2 Flammability:** beyond the Flash Point measurement
- 3 Corrosivity**
- 4 Ecotoxicity**
- 5 VOC content**
- 6 GWP average value**
- 7 Biodegradability**
- 8 COD** (Chemical Oxygen Demand)
- 9 Bioaccumulation**
- 10 Content in non renewable raw material**

While maintaining our solutions at a high level of technical and economical performance, we also define our products by their key impact parameters on health and environment.

If our engineers improve, significantly, 1/3 of parameters without degrading any of the others, we give the **GREENWAY™** "label" to a product.

If we do not further improve the product within the next 5 years, we take the label off.

The chemical reality does not imply black or white products where white products, supposedly, do not require any care when used-but more or less grey products that we "green up" progressively.

Up to now, in our high technology sectors, there are no standards de-



fining products or services that are more healthy or environmentally friendly, beyond regulations. Therefore the Greenway label is validated by **Bureau Veritas** as well as the products conformity to the new specifications.

GREENWAY™, is the 1st "label" of sustainable development created by a SME in the chemical industry.

The way we think, the way we act

We think that this approach goes beyond Inventec products and services. This is a permanent evolution due to a "sustainable" mindset of the whole company.

It means thinking about sustainable development right from the design phase and also in all implementation details of production, logistics, customer service etc...

In the long run, 30% of our products and services should meet the **GREENWAY™** objectives.

The extension to other activities of the Dehon group is expected.

This simple, focussed and honest approach corresponds to the state of mind of an international family owned SME in High Tech markets.

GREENWAY™ will be a real "green growth" opportunity for our "High Tech" customers.

Regulations

The hole in the ozone layer	Greenhouse effect	Lower atmosphere	Man and Environment	
Montreal Protocol since 1995	Kyoto Protocol	Air quality	Health – Environment 2007-2018	
EC Regulation N°1005/2009 on ozone depleting substances ODS	FGAS II EC Regulation N° 517/2014/EC	IED Directive 2010/75/UE Transposed into French law in the Decree 2013-374 and its establishments	Reach n°1907/2008/EC	CLP Regulation (EC) 1272/2008
To protect the ozone layer Halons, CFC, HCFC	To reduce greenhouse gas emissions and their impact on global warming CO ₂ , NO ₂ , HFC, PFC, SF ₆	To improve air quality in lower atmosphere VOCs - any product having a vapor pressure of 0.01 kPa or more at 293.15 K, or having a corresponding volatility under the particular conditions of use.	To protect people and the environment from harmful chemicals - Limiting animal testing Any exceptions (see annex 4 & 5)	To harmonize existing systems and have a unique system in the world concerning the classification, labeling and packaging of products
ODP Ozone Depletion Potential	GWP Global Warming Potential	POCP Photochemical Ozone Creation Potential	CMR Carcinogens, mutagens or toxic to reproduction substances	CLP Classification, Labelling and Packaging
<ul style="list-style-type: none"> • Substances: ODP=0. If not, prohibition of the sale in Europe for aerosols and foam since 1995. Regulated sales for export: purchase, sales and export declarations to the EU (CDS data base). • duty of reporting for methyl chloride. • training of personnel handling regulate substances. • Reporting obligation to the commission for all purchases and sales. 	<ul style="list-style-type: none"> • Application by January the 1st 2015. • Establishes rules on containment, use, recovery and destruction of fluorinated greenhouse gases. • Imposes conditions on the placing on the market of specific products and equipment that contain, or whose functioning relies upon, fluorinated greenhouse gases. • Certification for natural persons handling the products. • Recovering and recycling of products. • Reporting of importations and exportations of HFC's, HFO's, HFE's, PFC's. • Reduction of HFC's between 2016 and 2030 on the European market. • By 2030, it will be only 21% of HFC's in the market during the period 2009-2012. 	<ul style="list-style-type: none"> • Directive replacing and including the VOC regulation 1999/13/CE. • The chapter 5 includes the VOC regulation under the title: "<i>Special dispositions for installations and activities using organic solvents</i>". • MTD meilleures techniques disponibles (best techniques available) will be the base for the definition of limit values of emission: the conditions of authorization will be based on the MTD and include the reference documents development: the BREF, the one impacting the cleaning activity is the BREF SST. • Compliance with emission limit values (ELVs) does not exceed the emission levels associated with MTD. • Fields of application are the installations partly referred in Annex I and other installations listed in Annex VII. • Products with the hazard statements H340, H341, H350, H350i, H351, H360D, H360F, are controlled out under contained conditions, to the extent that it is technically and economically possible to do so in order to protect public health and the environment. 	<ul style="list-style-type: none"> • pre-registration: June/Nov 2008. • 2010 : Tonnage registration +1 000t per year CMR 1 & 2 > 1t/year y R50/53 > 100t/year. • 2010-2013 : Registration 100-1 000t/year. • 2018 : Registration 100-1 000t/year. • Requirements of authorizations for substances in the annexe XIV. 	<p>EL GHS (Global Harmonized System) of the United Nations undertakes to classify:</p> <ul style="list-style-type: none"> • The chemical substances and mixtures according to their hazardous properties. • Prescribes the pictogram and other entries to be made on the label. • On 01/12/2010, pure substances should be changed of classification and labelling. • By June the 1st 2015 all mixtures should be changed and labelled.

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