



SOLDERING

ECOFREC™ 320

WATER-BASED NO-CLEAN LIQUID FLUX
WAVE & SELECTIVE SOLDERING
EXCELLENT WETTING & HIGH RELIABILITY

BENEFITS

ECOFREC 320 is a low residue, no-clean, VOC (Volatile Organic Compound) free flux. Excellent soldering results within lead-free as well as leaded wave- and selective soldering processes are achieved while common solder balling issues are significantly reduced.

PERFORMANCE	<ul style="list-style-type: none"> Great performance for Ni/Au, Sn, Ag, HAL and OSP PCB finishes Exceptionally low levels of solder-ball formation High SIR values and passes BONO corrosion test Excellent pin-point testability
COST	<ul style="list-style-type: none"> Helps to avoid pre-mature failures of your electronic assembly No flux residue cleaning required
HSE	<ul style="list-style-type: none"> Free of halide (Fluoride, Chloride, Bromide) and halogen Free of CMR containing substances VOC free

FEATURES

SPECIFICATIONS	ECOFREC 320
Appearance	Colorless liquid
Solid content	3.5
Acid index (mg KOH/g)	32
Density at 20°C	1,005 - 1,013
Halogen content	No halogen
Flash point	no

CHARACTERISTICS

CHARACTERISTICS	VALUES	METHOD
Flux Classification	ORLO	ANSI/J-STD-004B
Copper mirror	Pass	ANSI/J-STD-004B
Chromate paper	Pass	ANSI/J-STD-004B
SIR (IPC)	Pass	ANSI/J-STD-004
Bono Corrosion test (85°C / 85% HR - 15 days)	Pass: FC=1%	INVENTEC: BRY-MO-058

PROCESS RECOMMENDATION

The best process will depend on factors such as operating conditions, equipment, board or component design. Our team is ready to advise you.

ECOFREC 320 must be applied by spray. Topside preheat temperature of 110 to 130°C is recommended to boil off the water and non-volatile solvents before entering wave soldering. The temperatures obtained during preheat and solder wave will eliminate the residues and provides good cosmetics. Unlike alcohol-based fluxes, ECOFREC 320 does not require acid index and density control.

PARAMETER	REMARK
Flux amount deposit	40-80 g/m ²
Preheating PCB top side PCB bottom side	110°C/238°F maximum 130°C/266°F maximum
Conveyer speed	0,8 - 1,8 m/mn
Conveyer angle	4-7° (7° typical)
Chip wave contact time	About 0,5-1 sec
Main wave contact time	About 2,5-4 sec
Solder bath temperature SnAgCu SnPb	Depending on alloy About 260-270°C/500-518°F About 245-255°C/473-491°F

Both laboratory testing and onsite product implementation at customers, lead to the recommended process settings. However, the actual settings may vary depending on manufactured assemblies, process equipment, components and boards being used, etc, ...

CLEANING POST SOLDERING

This product is a no-clean solder flux, so cleaning is not required to meet IPC standards. The chemistry is specially designed so that any remaining flux residue is chemically inert and will not impact your assembled board or packaging under normal conditions. However, when cleaning is desired or required (e.g., high reliability assembly or to improve conformal coating adhesion), the flux residue can be easily removed with INVENTEC's own formulated flux cleaners.

*Inventec has over 60 years' experience in high-tech cleaning for aqueous and solvent based systems.
Our solder materials are aligned with our cleaning solutions, which guarantees excellent cleaning.*

PROCESS TYPE	PCBA DEFLUXING SOLUTIONS
Manual	Quicksolv™ DEF90, Quicksolv™ DEF70, Promoclean™ TP61
Aqueous (Immersion or spray)	Promoclean™ DISPER 607, Promoclean™ DISPER 707, Promoclean™ DISPER 800
Co-solvent	Topklean™ EL 80 + Promosolv™ rinsing solvents
Mono-solvent (vapor phase)	Promosolv™ 70ES, Promosolv™ 70IS

Other products available, depending on specific customer requirements. Also check our maintenance cleaning solutions.

PACKAGING, STORAGE & SHELF LIFE

- To ensure the best product performance, the recommended storage temperature range is between 20°C to 30°C.
- Shelf-life is 18 months.

AVAILABLE PACKAGING



20 L CANISTER

Please verify the packaging details, including volume and availability, with your sales representative, as they may vary depending on the production facility where the product is manufactured.

HEALTH, SAFETY & ENVIRONMENT

ECOFREC 320 is a **GREENWAY** product. More info on our Greenway concept via this [link](#).



MAIN CONTRIBUTORS WHICH REDUCE IMPACT:

HUMAN HEALTH & SAFETY

- Waterbased formulation
- Non-flammable
- Non-toxic & replacement of corrosive materials by less hazardous, highly eye-irritating ones

ENVIRONMENT PROTECTION & RESOURCES SAVINGS

- Low environmental impact: no H labelling regarding aquatic toxicity
- Containing biobased dicarbon acids
- No-clean formulation minimizes needs for cleaning chemicals

No issues when used as recommended. Product must be handled in a well-ventilated room, away from any flames. Fumes must be evacuated from flux and solder workstations by means of an efficient exhaust. Safety glasses and gloves should always be worn when handling the flux.

In accordance with the Annex II of Directive 2011/65/UE (RoHS), including its amendments, we certify that this product does not contain quantities above 0.1% of Hg, Pb, Cr VI, PBB, PBDE, DEHP, BBP, DBP, DIBP and above 0.01% of Cd. INVENTEC PERFORMANCE CHEMICALS also fulfils its direct obligations under the REACH and Conflict Mineral regulations.

Please refer always to the Safety Data Sheet (SDS or MSDS) prior to use. Our SDS can be downloaded at www.quickfds.com. We will request to provide your email address, so we can automatically send you a new version of the SDS when a future update would occur.

TECHNICAL SUPPORT & FREE-OF-CHARGE TESTING

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

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.

When prior cleaning is required, 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.

Inventec is unique in the world by developing not only soldering materials but also cleaning and coating solutions. These materials are very closely linked with each other from a process point of view. Talking to our Technical Team, who understands very well these 3 different product groups, will help you greatly to overcome technical challenges within your overall process.

Contact our technical support via contact@inventec.dehon.com or your local sales representative.

ABOUT INVENTEC

Inventec is a global provider of SOLDERING, CLEANING, COATING, COOLING materials for Electronic, Semiconductor and Industrial applications. For over 60 years we have shown leadership in innovation by putting HEALTH IMPACT, SUSTAINABILITY and RELIABILITY at the core of our product development.

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

We supply to many industries but the excellent performance of our products in applications which demand high reliability, leads us to focus especially on the AUTOMOTIVE, AEROSPACE, SEMICONDUCTOR, ENERGY and MEDICAL industry.

www.inventec.dehon.com



SOLDERING
CLEANING
COATING
COOLING

This data is based on information that the manufacturer believes to be reliable and offered in good faith. In no event will INVENTEC PERFORMANCE CHEMICALS be responsible for special, incidental and consequential damages. The user is responsible to the Administrative Authorities (regulations for the protection of the Environment) for the conformity of his installation.

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