

PROMOSOLV™ RN 2/RN2B



FEATURES

Used for all industries, **PROMOSOLV™ RN2** is a fluid specially developed to **clean, rinse and dry all kind of materials**.

PROMOSOLV™ RN2 is a proprietary formulation composed of hydrofluoroether NOVEC™ 3M™ HFE-7100, pentafluorobutane and isobutanol, no ODP, non flammable, and a very low toxicity. Its typical physical properties are compared to other drying products. Its high boiling point and its very low surface tension, provide to the **PROMOSOLV™ RN2** some properties for the light degreasing into the vapour phase. It can be used **neat for fragile parts or also with an azeotropic blend or with the co-solvent process. It is the add-on product to the PROMOSOLV™ DS3.**

This High-Tech fluid has no ODP and its thermal and chemical stability and its very low toxicity provide the best industrial compromise for the safety in use and the environment.



Other PROMOSOLV™ hydrofluoroethers, azeotropics or mixtures

	Formulation	Boiling temperature	Application
PROMOSOLV™ RN1	Pentafluorobutane and HFE-7100	44°C	Film cleaning and heat transfer
PROMOSOLV™ RN2	Pentafluorobutane, HFE-7100 and isobutanol	43°C	Degreasing cleaning with co-solvents
PROMOSOLV™ NDE	Pentafluorobutane, HFE-7100 and 1,2 TDE	40°C	Degreasing and flux removal
PROMOSOLV™ DS3	Pentafluorobutane, HFE-7100 and isobutanol + additive	48°C	Spot free drying, after detergent cleaning

SPECIFICATIONS

CHARACTERISTICS	Units	Values	Methods
Aspect		Transparent, colourless	Visual
Non volatile residues	ppm weight	≤ 2,0	
Methoxynonafluorobutane	% weight	40 to 50 %	
Pentafluorobutane	% weight	40 to 50 %	
Isobutanol	% weight	< 5 %	

CHARACTERISTICS

PROPERTIES	Units	Promosolv RN2	CFC-113	HCFC-141b	Trichlor-ethylene	Methylene Chloride
Boiling point	°C	42	48	32	87	39.8
Freezing point	°C	-35	-35	-103	-86	-96.7
Flash point		None	None	None	None	None
Density	g/cm³	1.3	1.56	1.23	1.46	1.32
Surface tension	mN/m	13,6	17.3	19.3	22	25.5
Heat transfer :						
Vapour pressure	kPa	43,3	44.1	75.9	10	73.6
Dynamic viscosity	mPa.s	0.40	0.68	0.43	0.62	0.425
Latent heat of vaporization	kJ/kg@bp	180	146	223	265	391
Specific heat	kJ/kg K	1.1	0.92	1.26	0.93	1.3

PACKAGING TYPE

Packaging types of 35 kg and 250 kg available.

STORAGE & SHELF LIFE

PROMOSOLV™ RN2 is not flammable in the standard conditions of use or storage. This fluid is highly stable to thermal and chemical reaction when used or stored in normal conditions. Some more procedures are detailed into the safety data sheet available on request. This product does not sustain combustion according to the norm : ASTM D4206-86 (< 1 second).

To ensure the best product performance it is recommended to store the products in closed packaging types. Shelf life: 18 months under these conditions.

USE CONDITIONS

Material compatibility

As with the most fluorinated liquids, the **PROMOSOLV™ RN2** is absorbed by the plastics and the fluorinated elastomers in case of a prolonged exposure.

Metals	Plastics	Elastomers
Aluminium	Acrylic (PMMA)	Butyl rubber*
Copper	Polyethylene	Natural rubber
Carbon steel	Polypropylene	Nitril rubber
Stainless steel 302	Polycarbonate	EPDM
Brass	Polyester	
Molybdenum	Epoxy	
Tantalum	PET	
Tungsten	ABS	
Alloy Cu/Be C172		
Alloy Mg AZ31B		

Tested compatibility for an exposure of 1 hour at boiling temperature.

*Butyl rubber is preferable for a prolonged exposure > 1 month.

Exceptions : swelling of PTFE and silicon rubber

The compatibility tests of **PROMOSOLV™ RN2** show a good compatibility with a large range of metals, plastics and elastomers, similar to the performance of perfluorinated liquids.

A good compatibility with plastics particularly sensible as the polycarbonate and the PMMA indicate a possible use in the cleaning unit containing numerous components.

Applications :

PROMOSOLV™ RN2 is the raw material for a large range of azeotropic products. Neat it can remove dusts, light oils and silicone oils. But it can be also used with the co-solvent process for :

- Cleaning and rinsing product with co-solvent for heavy greases, oils, fluxes.
- As carrier for the lubricants
- Contact Spray solvent
- Fluorocarbons, Hydrocarbons, Silicones
- Add on product for the Promosolv DS3
- Heat transfer fluid
- Replacement agent for the CFC and HCFC

HSE

PROPERTIES	Units	Promosolv RN2	CFC-113	HCFC-141b	Trichlor- ethylene	Methylene Chloride
Environmental data :						
Ozone depletion pot.	ODP	0.00	0.80	0.10	<0.005	<0.005
Global warming pot.	GWP	170	5000	630	<10	<100
Atmospheric lifetime	Years	17	85	9.4	8	0.5
Toxicity :						
Exposure average: 8h	ppm	600	500	500	25	50
VOC		NO	YES	YES	YES	YES

R phrases : **R 30 :** Can become highly flammable in use
S phrases : **S 7 :** Keep container tightly closed
 S 21 : When using do not smoke

INVENTEC provide a recycling program for the used products. A technical information sheet describes the procedure « Eco-Program » which establishes a full report of the returned fluid, where and how this fluid was used and which specifies information, it is not been contaminated with some other substances. This necessary document shall be provided to you.

Please read carefully the safety data sheet of the product **PROMOSOLV™ RN2** before use. All safety measures should be taken. In all kind of handling or exposition to the product, the individual protection recommended by the safety data sheet should be taken. The typical figures used here above can be changed without notice.

The information contained in this product sheet is given for indicative purposes and in no way incurs the liability of INVENTEC. All users are liable, with respect to Administrative Authorities (regulation of facilities classified for the protection of the environment) for the compliance of their installation.

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