

# PROMOSOLV™ 90C



## FEATURES

Used in every industrial domain, **PROMOSOLV™ 90C** was specifically developed as a specialty solvent for **cleaning, degreasing, wax removing, rinsing, and drying** for an infinite number of materials.

**PROMOSOLV™ 90C** by INVENTEC, is a transparent, colorless and nearly odorless near-azeotropic blend of methoxynonafluorobutane (C<sub>4</sub>F<sub>9</sub>OCH<sub>3</sub>), NOVEC™ 3M™ HFE-7100 and 1,2-trans-dichlorethylene, designed to replace ozone layer destroying products that was developed for implementation in ultrasound cleaning. Its average boiling point and very low surface tension make **PROMOSOLV™ 90C** a product suitable for **vapor phase degreasing and drying** applications.

This exclusive fluid features no potential for ozone depletion and its chemical stability and low toxicity make it the most environmentally-friendly industrial product.



### Other PROMOSOLV™ azeotropic blends

	Formulation	Boiling point	Application
PROMOSOLV™ RN1	Pentafluorobutane and HFE-7100	44 °C	Cleaning films and heat transfer
PROMOSOLV™ RN2	Pentafluorobutane, HFE-7100 and isobutanol	43 °C	Cleaning degreasing with co-solvents
PROMOSOLV™ NDE	Pentafluorobutane, HFE-7100 and 1,2 TDE	40 °C	Degreasing and defluxing
PROMOSOLV™ DS3	Pentafluorobutane, HFE-7100 and isobutanol + additive	48 °C	Spot-less drying after detergent cleaning

## SPECIFICATIONS

Characteristics	Units	Methods	Values
Appearance		Visual	<i>clear</i>
Purity	%		> 99.0
RNV	ppm		< 20
Fluorocarbon mixture	% weight		> 20
1,2-transdichlorethylene	% weight		> 50

## CHARACTERISTICS

Properties	Units	PROMOSOLV™ 90C	CFC-113	HCFC-141b	Trichlor- ethylene	Methylene chloride
Boiling point	°C	43	48	32	87	39.8
Freezing point	°C	-100	-35	-103	-86	-96.7
Flash point		None	None	None	None	None
Density at 20 °C	g/cm <sup>3</sup>	1.26	1.56	1.23	1.46	1.32
Surface Tension at 25 °C	mN/m	17.9	17.3	19.3	22	25.5
Solubility of solvent In water	ppm	<100	110	290C0	1100	19000
<b>Heat transfer:</b>						
Vapor pressure at 20 °C	kPa	47	44.1	75.9	10	73.6
Dynamic viscosity at 25 °C	mPa.s	0.4	0.68	0.43	0.62	0.425
Heat of vaporization	kJ/kg@bp	325	146	223	265	391
Specific heat	kJ/kg K	1.14	0.92	1.26	0.93	1.3

## PACKAGING TYPE

In 30 kg and 230 kg containers.

## STORAGE & SHELF LIFE

**PROMOSOLV™ 90C** is noncombustible in normal conditions of use and storage. This fluid is highly resistant to heat aging and hydrolysis when stored and during use. Detailed handling procedures are provided in the corresponding safety data sheet, available on request. This product does not sustain burning according to standard ASTM D4206-86 (< 1 second).

Keep products in closed containers.  
Product shelf-life: 18 months.

## USE CONDITIONS

### Compatibility of materials

As with most solvents, **PROMOSOLV™ 90C** is absorbed by plastics and fluoroelastomers in case of prolonged exposure.

Metals	Plastics	Elastomers
Aluminum	Nylon	Butyl rubber*
Copper	Polyethylene	Natural rubber
Carbon steel	PTFE	Buna-S
Stainless steel	Polyester	EPDM
Brass (copper-zinc alloy)	Epoxy resin	Chlorosulfonated PE
Molybdenum		Polysulfide
Tantalum		
Tungsten		
Cu/Be C172 alloy		
Mg AZ32B alloy		

Compatible after exposure of 1 hour at boiling point.  
\* Butyl rubber is preferable for prolonged exposure > 1 month.  
Exception: swelling of PTFE and silicone rubber.

**PROMOSOLV™ 90C** compatibility tests show good compatibility with a wide range of metals, plastics and elastomers, similar to the performance of perfluorinated liquids.

### Applications :

The formulation of **PROMOSOLV™ 90C** differentiates it from **PROMOSOLV™ NDE** due to a strengthening of its degreasing power.

**PROMOSOLV™ 90C** is a near azeotropic product for degreasing heavy oils, greases, waxes, varnishes, particles, fluorinated lubricants. **PROMOSOLV™ 90C** can be used as a carrier solvent for fluorocarbonaceous, hydrocarbonaceous and silicon lubricants. It can also be used for specific applications such as spray contact cleaning and heat transfer. **PROMOSOLV™ 90C** is a product that can replace CFC and HCFC.

## HSE

Properties	unit	Promosolv 90C	CFC-113	HCFC-141b	Trichlor-ethylene	Methylene Chloride
<b>Environmental data</b>						
Ozone depletion potential	ODP	0	0.80	0.10	<0.005	<0.005
Greenhouse effect	GWP	260	5000	630	<10	<100
<b>Toxicity</b>						
Mean Exposure Values MEV/ 8h	ppm	200	500	500	25	50
VOC		YES	YES	YES	YES	YES

**R Phrases:** R 18 : In use, may form flammable/explosive vapor-air mixture.  
R 20 : Harmful by inhalation.  
R 52/53 : Harmful to aquatic organisms/ May cause long-term adverse effects in the aquatic environment.

**S Phrases:** S 16 : Keep away from sources of ignition – No smoking.  
S 29 : Do not empty into drains.  
S 36/37/39 : Wear suitable protective clothing/ gloves / eye/face protection.  
S 61 : Avoid release into the environment. Refer to special instructions safety data sheet.

**Symbol:** Xn : Harmful

INVENTEC has set up a program for the return of special used PROMOSOLV™ liquids. An “Eco-program” technical information sheet describes the procedure that begins with the production of a return fluids status report that summarizes important data related to the use of the fluids and that provides the assurance that the fluid has not been polluted by other substances after use. The necessary documentation will be provided to you.

Before using **PROMOSOLV™ 90C**, read the safety data sheet. All appropriate risk safety measures must be taken. For any handling or exposure to the product, the personal protection recommended by the safety data sheet must be worn. This product contains high purity trans-dichlorethylene whose MEV is 200 ppm. The concentration in cis-dichlorethylene is guaranteed to be less than 300 ppm; this product thus complies with regulations and INRS authorizations. The typical values cited above do not constitute sales specifications.

For end-of-life products, please consult our [Solvents Eco-program](#) service sheet.

*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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