

NOVEC™ 71IPA



FEATURES

Used for all industries, **NOVEC™ 71IPA** is a fluid specially formulated **to clean, to degrease, to deflux, to rinse and to dry all kind of materials.**

NOVEC™ 71IPA is a proprietary azeotropic formulation of the methoxy-nonafluorobutane ($C_4F_9OCH_3$) and isopropanol, clear, colourless and with a slight odour, designed to replace the existing solvents having an ODP and to be used for the cleaning operations with ultrasonics. Its high boiling point and its very low surface tension, provide to the **NOVEC™ 71IPA some outstanding degreasing characteristics when used neat or with a co-solvent into a vapour degreaser.**



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

Other NOVEC™ hydrofluoroethers, azeotropes and blends

	Formulation	Boiling temperature	Application
NOVEC™ 7100	Methoxy-nonafluorobutane	61 °C	Light cleaning, heat transfer, formulations
NOVEC™ 7200	Ethoxy-nonafluorobutane	76 °C	Film cleaning and heat transfer
NOVEC™ 71DE	7100 with Trans-1,2-dichlorethylene	41 °C	Degreasing + waxremoval
NOVEC™ 71DA	7100 with Trans-1,2-dichlorethylene and Ethanol	40 °C	Degreasing + flux removing

SPECIFICATIONS

Characteristics	Units	Values	Methods
Aspect	-	Transparent, colourless	
Non volatile residues	ppm	< 2	
Methoxy-nonafluorobutane ethers	% weight	> 95	
Isopropylic alcohol	% weight	< 5	

CHARACTERISTICS

Property	Units	71IPA	CFC-113	HCFC-141b	Trichlor-ethylene	Methylene Chloride
Boiling point	°C	55	48	32	87	39.8
Freezing point	°C	- 135	- 35	- 103	- 86	- 96.7
Flash point		aucun	aucun	aucun	aucun	aucun
Density	g/cm ³	1.48	1.56	1.23	1.46	1.32
Surface tension	mN/m	14.5	17.3	19.3	22	25.5
Heat transfer						
Vapour pressure	kPa	27.6	44.1	75.9	10	73.6
Dynamic viscosity	mPa.s	0.75	0.68	0.43	0.62	0.425
Lattent heat of vaporization	kJ/kg@bp	165	146	223	265	391
Specific heat	kJ/kg.K	1.17	0.92	1.26	0.93	1.3

PACKAGING TYPE

Packaging types of 5 kg, 25 kg and drums of 250 kg available.

STORAGE & SHELF LIFE

To ensure the best product performance it is recommended to store the products in closed packaging types. Shelf life: 24 months under these conditions.

PROCESS PARAMETERS

Material compatibility

As with the most fluorinated liquids, the NOVEC™ are 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 AZ32B		

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 **NOVEC™ 71IPA** 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

When used neat, the product **NOVEC™ 71IPA** is a soft degreaser to remove light oils, dusts and some finger prints with a vapour degreaser.

When contaminants are more difficult like, greases, oils, polishing pastes, the co-solvent range of products, TOPKLEAN, should be used before rinsing into the **NOVEC™ 71IPA** with ultrasonics or by sprays under immersion. This product is used in all kind of applications like:

Aircraft, airspace, mechanics, watches, jewellery, electronic, optical industries.

It is highly recommended to use it into a performing freezing vapour degreaser.

For more information, please contact your local INVENTEC Distributor.

HSE

Property	Unit	71IPA	CFC-113	HCFC-141b	Trichlor-ethylen	Methylene Chloride
Environmental data						
Ozone depletion pot.	ODP	0.00	0.80	0.10	< 0.005	< 0.005
Global warming pot.	GWP	320	5000	630	< 10	< 100
Atmospheric life time	Years	3.8	85	9.4	8	0.5
Toxicity						
Exposure average: 8h	ppm	600	500	500	25	50
VOC		YES	YES	YES	YES	YES

R phrases : **R 18** : In use, may form flammable/explosive vapour-air mixture.

The hydrofluoroether **NOVEC™ 71IPA** 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).

Please read carefully the safety data sheet of the product **NOVEC™ 71IPA** 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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