EC safety data sheet

Trade name	**NC 1/14**	first issued	April 1994
		status	26.03.2003
		date of printing	18.08.2006

1. Identification of the substance / preparation and company

Trade name:
NC 1/14

Use:
Lubricating fluid for vacuum pumps

Packing:
1 litre Cat. - No. 177 38

Identification of the manufacturer / supplier

Adress supplier

Leybold Vakuum GmbH
P.O. Box 510760
D-50943 Köln
Phone ++49 (0)221-347-0
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Emergency telephone number:
++49 (0)221-347-0

2. Composition / information on ingredients

Chemical characterization

Chemical Name:	Perfluoropolyethers
Molecular Weight:	2500 g / mol
Structural Formula:	$CF_3 - (O - CF(CF_3) - CF_2)_n - (O - CF_2)_m - O - CF_3$
CAS Name:	1 - Propene, 1,1,2,3,3,3 - hexafluoro -, oxidized, polymd.
CAS Number:	69991 – 67 – 9
EEC Number:	exempted
EINECS Number:	not assigned
ELINCS Number:	not assigned

Dangerous Components:
Substances with established exposure limits or classifiable as dangerous according to EC Directive 67/548 and following amendments in concentration equal or higher than that reported in EC Directive 88/379 item 3 sect. 6

Name	Conc.	CAS No	Symbol	Risk Phrases
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3. Hazards identification

Hazards symbols:
None.

R phrases:
None.

Particular information pertaining specific risk for human / environment:

Adverse Effects for the Human Health:
The product, when properly handled, according to the good working and hygienic practices, is not dangerous for the human health.

Environmental effects:
The product, when properly handled, according to the good working and hygienic practices, is not dangerous for the environment.

Specific hazards:
Harmful effects for health and environment may occur in case of thermal decomposition, due to heating or fire, for the emission of toxic and corrosive gases.

4. First aid measures

After inhalation:
No data available.

After skin contact:
Wash with water and soap.

After eye contact:
Wash with plenty of water for at least 15 minutes.

After ingestion:
Give some glasses of water to drink. Induce vomiting. Seek medical advice in case of persistent pain.

General information:

Symptomatology following Exposure:

Eye contact	Redness
Skin contact	Redness
Ingestion	Abdominal pain, nausea, vomit.

5. Fire fighting measures

Suitable extinguishing media:
Water, powders, foams, chemicals, CO_2.

Extinguishing media that must not be used for safety reasons:
No data available.

Special exposure hazards arising from the substance or preparation itself, its combustion products or from resulting gases:
The product is not flammable and not explosive. The heating of the product may cause decomposition with emission of toxic and corrosive vapours.

Special protective equipment for firefighting:
Self-contained breathing apparatus. Protective clothing for skin and eyes against corrosive vapours.

Other information:
Stay upwind and at safety distance from flames. In case of surrounding fire, remove the containers, when possible to do so in safe conditions. In case of fire keep containers cool by spraying with water.

6. Accidental release measures

Personal precautions:
Stop the release as soon as possible, in safe conditions. Avoid the contact of the released product with glowing surfaces and flames. Possible risk only in case of thermal decomposition of the released product.

Environmental precautions:
Avoid the discharge of the released product in sewage systems, in surface and underground waters, in the soil.

Methods for cleaning up/taking up:
Absorb the released liquid with earth, sand and sawdust and collect it in suitable containers for disposal.

7. Handling and storage

Handling

Advice on safe handling:
Avoid heating the product above its decomposition temperature (290 °C).
Provide working areas with adequate ventilation systems and with water-wash facilities (eye-bath and emergency showers).

Storage

Storage conditions:
Keep away from heat sources. Keep away from combustible and explosive materials. Keep away from incompatible substances (see section 10).

Packaging:
Recommended materials: Metal, plastic, glass.
Non suitable materials Not lined metals are unsuitable because of slow corrosion.

8. Exposure controls / personal protection

Exposure limit values

Exposure Limits
Only threshold limits (ACGIH 2002) of by - products from thermal decomposition are available:

HF	TLV / CEILING	= 2,6 mg / m³	= 3 ppm
COF_2	TLV / STEL	= 13,5 mg / m³	= 5 ppm

Personal protective equipment:

Respiratory protection:
Not necessary in normal use, self - contained breathing apparatus in case of fire.

Hand protection:
Rubber gloves

Eye protection:
Safety goggles

Skin protection:
Worksuit or rubber apron

General protective and hygiene measures:
Do not drink, eat and smoke during handling.

9. Physical and chemical properties

Erscheinungsbild

Form	liquid
Colour	colourless
Odour	odourless

Important health, safety and environmental information

pH-value	not applicable		
Changes in physical state:			
Pour Point	- 40	°C	DIN ISO 3016
Boiling point (760mmHg)	> 270	°C	
Flash Point	not flammable		DIN ISO 2592
Explosion properties	not explosive		
Explosion limits			
Explosion lower limit	not applicable		
Explosion upper limit	not applicable		
vapour pressure (20°C)	3 x 10 ^-7	mbar	
Density (20 °C)	1,89	g/ml	DIN 51 757 V4

Solubility:			
Solubility in water (20°C)	not soluble		
Solubility in org. Solvents	soluble in fluorinated solvents		
kinematic viscosity (20°C)	148	mm²/s	ASTM D 445

10. Stability and reactivity

Stability:
The product is stable in normal conditions of use and storage.

Conditions to avoid:
Avoid heating the product above 290 °C. Avoid contact with flames.

Materials to avoid:
Strong alkaline compounds (alkaline hydroxides, ammonia, non aqueous alkalis). Lewis acids ($AlCl_3$, SbF_5, CoF_3) above 100 °C. Powered magnesium, aluminium and their alloys above 100 °C

Hazardous decomposition products:
The product may decompose at temperature above 290 °C with emission of HF and COF_2, which are toxic and corrosive gases; metals promote the decomposition.

11. Toxicological information

Penetrations Routes:
Contact or ingestion of the liquid product. Inhalation of gases from thermal decomposition.

Adverse Effects for the Human Health:
Delayed and/or immediate effects after short and/or prolonged exposure:

Acute toxicity	no known effect
Local effects / irritation	Not irritant; decomposition products may cause severe irritation to skin, power eye and mucosae.
Sensitization	no known effect
Chronic Toxicity	no known effect
Carcinogenicity	no known effect
Mutagenicity	no known effect
Reproduction toxicity	no known effect

Experimental toxicological data

LD50	oral	> 2000 mg/kg	Species: rat
NOEL	oral	1000 mg/kg/day/(28d)	Species: rat
LD50	dermal	> 2000 mg/kg	Species: rat
Irritation	skin	non irritant	Species: rabbit
Irritation	eye	non irritant	Species: rabbit
Sensitisation	skin	non sensitising	Species: Guinea pig
Mutagenicity	Ames test	negative (in vitro and in vivo)	Species: ---

12. Ecological information

Environmental effects:

Mobility:	no available data
Persistence / degradability	no available data
Bioaccumulation	no available data
Ecostability data	no available data

Ecotoxicity data:

LC_{50}	fish	> max. solubility of product in water	Species: Rainbow trout
EC_{50}	crustaceans	> max. solubility of product in water	Species: Daphnia magna
EC_{50}	bacteria	> max. solubility of product in water	Species: ----

Evaluation:
Use the product according to the good working practice, avoiding polluting the environment

13. Disposal considerations

Waste treatment:
Send the waste product to thermal destruction, using high-temperature incinerators designed to burn fluorine compounds.

Packaging treatment:
Reuse, when possible, the containers, after thorough washing. Send the waste containers to authorized landfills, according to local laws and regulations.

14. Transport information

Specific Hazards:
Product not dangerous for transportation.

International Transport classification:

U.N. Number	not assigned
Packaging group	not assigned
Road Transportation (ADR)	not classified
Rail Transportation (RID / RMP)	not classified
Sea Transportation (IMDG / IMO)	not classified
Air Transportation (ICAO / IATA)	not classified

15. Regulatory information

CEE Regulations (Directive 67 / 548 and following amendments)

Classification:

Classification type:	not required
Hazard class:	none

Hazard symbols:
None.

R-phrases:
None.

S-phrases:
None.

16. Other information

LEYBOLD is not the manufacturer. The above information is based on the information by our suppliers. We ourselves have not checked this information. Any liability which exceeds our existing liabilities is excluded by us.

Please note, that the information provided in the safety data sheets refers only to the product which is indicated. This information may not apply when using the product together with other materials or when processing it.
This information is based on our present state of knowledge. However, it should not constitute a guarantee for any specific product properties and shall not establish a legally valid relationship.

Information provided by:
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