



## Vydax® NRT 960

Version 2.0

Revision Date 07/08/2015

Ref. 130000044088

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

### SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Vydax® NRT 960  
 Product Use : Dry lubricant, For industrial use only.

Restrictions on use : Do not use product for anything outside of the above specified uses  
 Manufacturer/Supplier : Ratermann Manufacturing, Inc.  
 601 Pinnacle Place  
 Livermore, CA 94550  
 United States of America

Product Information : 1-800-264-7793  
 Medical Emergency : 1-800-441-3637 (outside the U.S. 1-302-774-1139)  
 Transport Emergency : CHEMTREC: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

### SECTION 2. HAZARDS IDENTIFICATION

Not classified as a hazardous substance or mixture according to the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard 2012.

#### Other hazards

Rapid evaporation of the liquid may cause frostbite.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

1,1,1,2,2,3,4,5,5,5-Decafluoropentane	138495-42-8	69.2 %
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This product does not contain any components that require disclosure according to OSHA Hazard Communication Standard 2012.

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**SECTION 4. FIRST AID MEASURES**

General advice	: Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt seek medical advice.
Inhalation	: Move to fresh air. Oxygen or artificial respiration if needed. Consult a physician.
Skin contact	: Wash off immediately with plenty of water. Wash contaminated clothing before re-use.
Eye contact	: Immediately flush eyes for at least 15 minutes. Get medical attention.
Ingestion	: Do not induce vomiting. If conscious, give 2 glasses of water. Get immediate medical attention.
Most important symptoms/effects, acute and delayed	: Inhalation may provoke the following symptoms: Polymer fume fever Cough Irregular cardiac activity Dizziness Unconsciousness
Protection of first-aiders	: First Aid responders should pay attention to self-protection and use the recommended protective clothing
Notes to physician	: Treat symptomatically.

**SECTION 5. FIREFIGHTING MEASURES**

Suitable extinguishing media	: The product itself does not burn., Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	: No applicable data available.
Specific hazards	: Pressure build-up.
Special protective equipment for firefighters	: Wear self-contained breathing apparatus and protective suit.

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Further information : Standard procedure for chemical fires. Keep containers and surroundings cool with water spray. Evacuate personnel to safe areas.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Safeguards (Personnel) : Immediately evacuate personnel to safe areas. Ventilate the area. Keep people away from and upwind of spill/leak. Use personal protective equipment. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Do not contaminate surface water. Do not let product enter drains.

Spill Cleanup : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Evaporates.

Accidental Release Measures : For disposal considerations see section 13.

**SECTION 7. HANDLING AND STORAGE**

Handling (Personnel) : Do not breathe vapours or spray mist. Provide sufficient air exchange and/or exhaust in work rooms. Keep away from fire, sparks and heated surfaces. In case of insufficient ventilation, wear suitable respiratory equipment. General industrial hygiene practice.

Handling (Physical Aspects) : Normal measures for preventive fire protection.

Dust explosion class : No applicable data available.

Storage : Keep container tightly closed in a dry and well-ventilated place. Keep away from direct sunlight.  
No special restrictions on storage with other products.  
No decomposition if stored and applied as directed.

Storage period : No applicable data available.

Storage temperature : No applicable data available.

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**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Engineering controls : Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.

Hand protection : Material: Impervious gloves

Eye protection : Safety glasses Face-shield

Skin and body protection : Lightweight protective clothing

Exposure Guidelines

Exposure Limit Values

1,1,1,2,2,3,4,5,5,5-Decafluoropentane

AEL \* (DUPONT) 200 ppm

8 & 12 hr. TWA

AEL \* (DUPONT) 400 ppm

Ceiling Limit Value:

\* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance

Physical state : liquid

Form : aerosol

Color : colourless

Odor : No applicable data available.

Odor threshold : No applicable data available.

pH : No applicable data available.

Melting point/range : No applicable data available.

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Boiling point/boiling range	: Boiling point 55 °C (131 °F)
Flash point	: does not flash
Evaporation rate	: No applicable data available.
Flammability (solid, gas)	: No applicable data available.
Upper explosion limit	: No applicable data available.
Lower explosion limit	: No applicable data available.
Vapor pressure	: 5,606 hPa at 25 °C (77 °F)
Vapour density	: No applicable data available.
Density	: 1.5 g/cm <sup>3</sup> at 25 °C (77 °F) (as liquid)
Specific gravity (Relative density)	: No applicable data available.
Water solubility	: immiscible
Solubility(ies)	: No applicable data available.
Partition coefficient: n-octanol/water	: No applicable data available.
Auto-ignition temperature	: No applicable data available.
Decomposition temperature	: > 400 °C
Viscosity, kinematic	: No applicable data available.
Viscosity, dynamic	: No applicable data available.
% Volatile	: 95 - 98 %

**SECTION 10. STABILITY AND REACTIVITY**

Reactivity : Stable under recommended storage conditions.



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Chemical stability	:	Stable under normal conditions. Stable under recommended storage conditions.
Possibility of hazardous reactions	:	No applicable data available.
Conditions to avoid	:	No applicable data available.
Incompatible materials	:	alkaline-earth compounds alkali compounds, Strong bases
Hazardous decomposition products	:	No applicable data available.

### SECTION 11. TOXICOLOGICAL INFORMATION

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Inhalation	:	The thermal decomposition vapours of fluorinated polymers may cause polymer fume fever with flu-like symptoms in humans, especially when smoking contaminated tobacco.
Further information	:	Rapid evaporation of the liquid may cause frostbite.
Further information	:	Concentrations substantially above the TLV value may cause narcotic effects.
1,1,1,2,2,3,4,5,5,5-Decafluoropentane	:	
Dermal LD50	:	> 5,000 mg/kg , Rabbit
Oral LD50	:	> 5,000 mg/kg , Rat
Skin irritation	:	No skin irritation, Rabbit
Eye irritation	:	No eye irritation, Rabbit
Skin sensitization	:	Did not cause sensitisation on laboratory animals., Guinea pig
Repeated dose toxicity	:	Inhalation Rat - No toxicologically significant effects were found.
Mutagenicity	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects. Animal testing did not show any mutagenic effects.
Reproductive toxicity	:	No toxicity to reproduction Animal testing showed no reproductive toxicity.

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Teratogenicity : Animal testing showed no developmental toxicity.

**Carcinogenicity**

The carcinogenicity classifications for this product and/or its ingredients have been determined according to HazCom 2012, Appendix A.6. The classifications may differ from those listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or those found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition).

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

**SECTION 12. ECOLOGICAL INFORMATION****Aquatic Toxicity**

1,1,1,2,2,3,4,5,5,5-Decafluoropentane

96 h LC50	:	Oncorhynchus mykiss (rainbow trout) 13.9 mg/l
96 h LC50	:	Pimephales promelas (fathead minnow) 27.2 mg/l
96 h LC50	:	Danio rerio (zebra fish) 13 mg/l
72 h EC50	:	Pseudokirchneriella subcapitata (green algae) > 120 mg/l
48 h LC50	:	Daphnia magna (Water flea) 11.7 mg/l
21 d	:	NOEC Daphnia magna (Water flea) 1.72 mg/l

**Environmental Fate**

1,1,1,2,2,3,4,5,5,5-Decafluoropentane

Biodegradability	:	Not readily biodegradable.
Bioaccumulation	:	Bioaccumulation is unlikely.

Additional ecological information : No data is available on the product itself.

**SECTION 13. DISPOSAL CONSIDERATIONS**

Waste disposal methods - : Dispose of as special waste in compliance with local and national regulations.


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Product

Contaminated packaging : If recycling is not practicable, dispose of in compliance with local regulations.

**SECTION 14. TRANSPORT INFORMATION**

DOT	UN number	: 1950
	Proper shipping name	: Aerosols
	Class	: 2.2
	Labelling No.	: 2.2
IATA_C	UN number	: 1950
	Proper shipping name	: Aerosols, non-flammable
	Class	: 2.2
	Labelling No.	: 2.2
IMDG	UN number	: 1950
	Proper shipping name	: AEROSOLS
	Class	: 2.2
	Labelling No.	: 2.2

**SECTION 15. REGULATORY INFORMATION**

TSCA : Listed  
 1,1,1,2,2,3,4,5,5,5-DECAFLUOROPENTANE (CAS# 138495-42-8) is controlled by TSCA Section 5, Significant New Use Rule (SNUR; 40 CFR 721.5645) The approved uses are: precision and general cleaning, carrier fluid, displacement drying, printed circuit board cleaning, particulate removal and film cleaning, process medium, heat transfer fluid (dielectric and non-dielectric), and test fluid. Processors and users of this substance must also comply with the applicable general SNUR requirements set forth in 40 CFR 721 subpart A, including export notification requirements if applicable (40 CFR 721.20), and the applicable record keeping requirements set forth at 40 CFR 721.125.



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- Other regulations : No specific information about other regulations/legislation to be mentioned.
- SARA 313 Regulated Chemical(s) : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
- California Prop. 65 : WARNING! This product contains a chemical or chemicals known to the State of California to cause cancer. Tetrafluoroethylene  
WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Toluene

**SECTION 16. OTHER INFORMATION**

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Revision Date : 07/08/2015

Contact: Ratermann Manufacturing, Inc.  
601 Pinnacle Place  
Livermore, CA 94550

Telephone Number: 800-264-7793

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