



Krytox™ Sodium Nitrite Inhibited PFPE/PTFE Greases

Version 5.0 (replaces: Version 4.0)

Revision Date 16.10.2015

Ref. 150000001171

This Safety Data Sheet adheres to the standards and regulatory requirements of Great Britain and may not meet the regulatory requirements in other countries.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : Krytox™ Sodium Nitrite Inhibited PFPE/PTFE Greases

Types : GPL: 220, 221, 222, 223, 224, 225, 226, 227, 227-500
XHT - AC, ACX, NDR 1466
FG 34
Corrugator: 226 FG, 227 FG
Hi Temp T8-26, T8-27
HTC: 26, 27
AUT 2245
Krytox SLB 266
Krytox MF440

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Lubricant, For industrial use only.

1.3. Details of the supplier of the safety data sheet

Company : Chemours Netherlands B.V.
Baanhoekweg 22
NL-3313 LA Dordrecht
Netherlands

Telephone : +31-(0)-78-630-1011

Telefax : +31-78-6163737

E-mail address : sds-support@chemours.com

1.4. Emergency telephone number

Emergency telephone number : +(44)-870-8200418

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.2. Label elements



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Special labelling of certain
substances and mixtures

EUH210: Safety data sheet available on request.,

Not a classified substance or mixture according to Regulation (EC) No. 1272/2008.

2.3. Other hazards

The thermal decomposition vapours of fluorinated plastics may cause polymer fume fever with flu-like symptoms in humans, especially when smoking contaminated tobacco.

Repeated episodes of polymer fume fever may result in persistent lung effects.

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Registration number	Classification according to Regulation (EU) 1272/2008 (CLP)	Concentration (% w/w)
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Perfluoroalkylether (CAS-No.60164-51-4)

		71 - 80 %
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Polytetrafluoroethylene (CAS-No.9002-84-0)

		18 - 27 %
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Sodium nitrite (CAS-No.7632-00-0) (EC-No.231-555-9)

	Ox. Sol. 3; H272 Acute Tox. 3; H301 Acute Tox. 4; H332 Eye Irrit. 2; H319 Muta. 2; H341 Aquatic Acute 1; H400 Aquatic Chronic 3; H412	1 - 5 %
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The above products are compliant to REACH registration obligations; Registration number(s) may not be provided because substance(s) are exempted, not yet registered under REACH or are registered under another regulatory process (biocide uses, plant protection products), etc.

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures



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- 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 in case of accidental inhalation of fumes from overheating or combustion. Oxygen or artificial respiration if needed.
- Skin contact : Wash with water and soap as a precaution.
- Eye contact : Rinse with plenty of water. If eye irritation persists, consult a specialist.
- Ingestion : Do not induce vomiting without medical advice. Drink 1 or 2 glasses of water. If a person vomits when lying on his back, place him in the recovery position. Consult a physician.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms : Inhalation may provoke the following symptoms:, Inhalation of fluorinated compounds may cause lung irritation and pulmonary oedema., The thermal decomposition vapours of fluorinated plastics may cause polymer fume fever with flu-like symptoms in humans, especially when smoking contaminated tobacco.
: Eye contact may provoke the following symptoms:, Blurred vision, Discomfort, Lachrymation
: Skin contact may provoke the following symptoms:, Irritation, Redness

4.3. Indication of any immediate medical attention and special treatment needed

- Treatment : Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : The product itself does not burn.
: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2. Special hazards arising from the substance or mixture

- Specific hazards during firefighting : In fire conditions, toxic decomposition products may be formed. (see also section 10)

5.3. Advice for firefighters

- Special protective equipment : Wear full protective clothing and self-contained breathing apparatus.



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for firefighters

Further information : Standard procedure for chemical fires.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions : Avoid contact with the skin and the eyes. Refer to protective measures listed in sections 7 and 8.

6.2. Environmental precautions

Environmental precautions : Prevent material from entering sewers, waterways, or low areas.

6.3. Methods and materials for containment and cleaning up

Methods for cleaning up : Shovel into suitable container for disposal.
Wipe up with absorbent material (e.g. cloth, fleece). Pick up and transfer to properly labelled containers. Do not flush with water. Do not let product enter drains.

6.4. Reference to other sections

For personal protection see section 8., For disposal instructions see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling : Avoid contact with skin and eyes.

Avoid breathing vapors from overheated material. Do not store or consume food, drink or tobacco in areas where they may become contaminated with this material.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : No special storage conditions required. Keep container closed to prevent contamination.

Other data : No decomposition if stored and applied as directed.

7.3. Specific end use(s)

no data available



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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

If sub-section is empty then no values are applicable.

8.2. Exposure controls

- | | | |
|--------------------------|---|---|
| Engineering measures | : | In the event that the polymer is heated above 300°C (572 F) local ventilation should be used to avoid exposure to fumes. |
| Eye protection | : | Wear safety glasses. Eye protection complying with EN 166. |
| Hand protection | : | Impervious gloves Protective gloves complying with EN 374. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. |
| Skin and body protection | : | Long sleeved shirt and long pants |
| Hygiene measures | : | General industrial hygiene practice.

Keep away from food and drink. Keep away from tobacco products. Wash hands and face before breaks and immediately after handling the product. |
| Respiratory protection | : | In the case of hazardous fumes caused by overheating, wear self-contained breathing apparatus. |

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- | | | |
|-----------------------|---|----------------|
| Form | : | grease |
| Colour | : | white |
| Odour | : | none |
| pH | : | neutral |
| Melting point/range | : | 320 °C |
| Flash point | : | does not flash |
| Ignition temperature | : | |
| Thermal decomposition | : | 320 °C |



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Relative density : 1.89 - 1.93 at 24 °C

Water solubility : insoluble

9.2. Other information

no data available

SECTION 10: Stability and reactivity

10.1. Reactivity : Stable under recommended storage conditions.

10.2. Chemical stability : Stable under normal conditions.

10.3. Possibility of hazardous reactions : no data available

10.4. Conditions to avoid : Decomposition temperature : 320 °C

10.5. Incompatible materials : no data available

10.6. Hazardous decomposition products : Fluorinated compounds

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity

ALD - Approximate Lethal Dose / Rat : > 11,000 mg/kg

LD50 / Rat : > 5,000 mg/kg

- Perfluoroalkylether
LD50 / Rat : > 11,000 mg/kg
- Polytetrafluoroethylene
LD50 / Rat : > 11,280 mg/kg
- Sodium nitrite
LD50 / Rat : 180 mg/kg

Acute inhalation toxicity

Acute toxicity estimate : > 5 mg/l
Method: Calculation method



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- Perfluoroalkylether
LC50 / 4 h Rat
Due to its physical properties, there is no potential for adverse effects. Information given is based on data obtained from similar substances.
- Polytetrafluoroethylene
The thermal decomposition vapours of fluorinated plastics may cause polymer fume fever with flu-like symptoms in humans, especially when smoking contaminated tobacco.
- Sodium nitrite
LC50 / 4 h Rat : 1.45 mg/l
Dust

Acute dermal toxicity

- Perfluoroalkylether
LD50 / Rabbit : > 17,000 mg/kg

Skin irritation

Rabbit

Classification: Not classified as irritant

Result: slight irritation

- Perfluoroalkylether
Rabbit
Classification: Not classified as irritant
Result: No skin irritation

- Polytetrafluoroethylene
Rabbit
Classification: Not classified as irritant
Result: No skin irritation

human

Classification: Not classified as irritant

Result: No skin irritation

- Sodium nitrite
Rabbit
Classification: Not classified as irritant
Result: No skin irritation
Method: OECD Test Guideline 404
slight irritation

Eye irritation

Rabbit

Classification: Not classified as irritant



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Result: slight irritation

- Perfluoroalkylether
Rabbit
Classification: Not classified as irritant
Result: No eye irritation
- Sodium nitrite
Rabbit
Classification: Irritating to eyes.
Result: Eye irritation
Method: OECD Test Guideline 405

Sensitisation

Guinea pig

Result: Animal test did not cause sensitization by skin contact.

- Perfluoroalkylether
Guinea pig
Classification: Does not cause skin sensitisation.
Result: Does not cause skin sensitisation.
Method: OECD Test Guideline 406
- Polytetrafluoroethylene
human
Classification: Not a skin sensitizer.
Result: Does not cause skin sensitisation.
Patch test on human volunteers did not demonstrate sensitisation properties.
- Sodium nitrite
Guinea pig Modified Buehler Test
Classification: Does not cause skin sensitisation.
Result: Does not cause skin sensitisation.
Method: OECD Test Guideline 406

Repeated dose toxicity

- Perfluoroalkylether
Oral Rat
No toxicologically significant effects were found.

Inhalation Rat
No toxicologically significant effects were found.
- Polytetrafluoroethylene
Oral - feed Rat
No toxicologically significant effects were found.



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- Sodium nitrite
Oral multiple species
No toxicologically significant effects were found.

Mutagenicity assessment

In vitro skin absorption study (OECD 428) - Total amount of absorbable sodium nitrite through human skin: 0.026%

- Perfluoroalkylether
Did not cause genetic damage in cultured bacterial cells.
- Polytetrafluoroethylene
Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
- Sodium nitrite
In vitro tests showed mutagenic effects Experiments showed mutagenic effects in cultured bacterial cells.
Genetic damage in cultured mammalian cells was observed in some laboratory tests but not in others.
Genetic damage in animals was observed in some laboratory tests but not in others.

Carcinogenicity assessment

Animal testing did not show any carcinogenic effects.

- Polytetrafluoroethylene
Not classifiable as a human carcinogen.
- Sodium nitrite
Not classifiable as a human carcinogen. Animal testing did not show any carcinogenic effects.

Toxicity to reproduction assessment

No toxicity to reproduction

- Polytetrafluoroethylene
No toxicity to reproduction
- Sodium nitrite
No toxicity to reproduction Animal testing showed effects on reproduction at levels equal to or above those causing parental toxicity.

Assessment teratogenicity

No toxicity to reproduction

- Sodium nitrite
Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.



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Human experience

Excessive exposures may affect human health, as follows:

Eye contact

Irritation, Discomfort, Blurred vision

SECTION 12: Ecological information

12.1. Toxicity

Toxicity to fish

- Perfluoroalkylether
LC50 / 96 h / Oncorhynchus mykiss (rainbow trout): > 1,000 mg/l
- Polytetrafluoroethylene
The substance is a polymer and is not expected to produce toxic effects.
- Sodium nitrite
LC50 / 96 h / Oncorhynchus mykiss (rainbow trout): 0.54 mg/l

Toxicity to aquatic plants

- Perfluoroalkylether
ErC50 / 72 h / Pseudokirchneriella subcapitata (green algae): > 1,000 mg/l
NOEC / 72 h / Pseudokirchneriella subcapitata (green algae): > 1,000 mg/l
- Sodium nitrite
ErC50 / 72 h / Desmodesmus subspicatus (green algae): > 100 mg/l
NOEC / 72 h / Desmodesmus subspicatus (green algae): 100 mg/l

Toxicity to aquatic invertebrates

- Perfluoroalkylether
EC50 / 48 h / Daphnia magna (Water flea): > 100 mg/l
- Sodium nitrite
EC50 / 48 h / Daphnia magna (Water flea): 15.4 mg/l

Chronic toxicity to fish

- Sodium nitrite
NOEC / 29 d / Cyprinus carpio (Carp): 21 mg/l

12.2. Persistence and degradability



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Biodegradability

Not readily biodegradable.

12.3. Bioaccumulative potential

no data available

12.4. Mobility in soil

no data available

12.5. Results of PBT and vPvB assessment

no data available

12.6. Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product : Dispose of as hazardous waste in compliance with local and national regulations. Dispose of in accordance with the European Directives on waste and hazardous waste. Do not contaminate ponds, waterways or ditches with chemical or used container.

Contaminated packaging : Contaminated/not cleaned containers should be treated/handled like product waste. Do not allow rinsate from cleaning of equipment or disposed material to enter surface or groundwater.

SECTION 14: Transport information

ADR

- 14.1. UN number: Not applicable
14.2. UN proper shipping name: Not applicable
14.3. Transport hazard class(es): Not applicable
14.4. Packing group: Not applicable
14.5. Environmental hazards: none
14.6. Special precautions for user:
Not classified as dangerous in the meaning of transport regulations.

IATA_C

- 14.1. UN number: Not applicable
14.2. UN proper shipping name: Not applicable
14.3. Transport hazard class(es): Not applicable
14.4. Packing group: Not applicable
14.5. Environmental hazards: none



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14.6. Special precautions for user:
Not classified as dangerous in the meaning of transport regulations.

IMDG

14.1. UN number: Not applicable
14.2. UN proper shipping name: Not applicable
14.3. Transport hazard class(es): Not applicable
14.4. Packing group: Not applicable
14.5. Environmental hazards: none
14.6. Special precautions for user:
Not classified as dangerous in the meaning of transport regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Other regulations : Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

15.2. Chemical Safety Assessment

A Chemical Safety Assessment is not required for this/these products

SECTION 16: Other information

Full text of H-Statements referred to under section 3.

H272 May intensify fire; oxidizer.
H301 Toxic if swallowed.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H341 Suspected of causing genetic defects.
H400 Very toxic to aquatic life.
H412 Harmful to aquatic life with long lasting effects.

Other information professional use

Abbreviations and acronyms

ADR European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE Acute toxicity estimate
CAS-No. Chemical Abstracts Service number
CLP Classification, Labelling and Packaging
EbC50 Concentration at which 50% reduction of biomass is observed
EC50 Median effective concentration
EN European Norm
EPA Environmental Protection Agency



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ErC50	Concentration at which a 50% inhibition of growth rate is observed
EyC50	Concentration at which 50 % inhibition of yield is observed
IATA_C	International Air Transport Association (Cargo)
IBC	International Bulk Chemical Code
ICAO	International Civil Aviation Organization
ISO	International Standard Organization
IMDG	International Maritime Dangerous Goods
LC50	Median Lethal Concentration
LD50	Median Lethal Dose
LOEC	Lowest Observed Effect Concentration
LOEL	Lowest observed effect level
MARPOL	International Convention for the Prevention of Marine Pollution from Ships
n.o.s.	Not Otherwise Specified
NOAEC	No Observed Adverse Effect Concentration
NOAEL	No observed adverse effect level
NOEC	No Observed Effect Concentration
NOEL	No Observed Effect Level
OECD	Organisation for Economic Co-operation and Development
OPPTS	Office of Prevention, Pesticides and Toxic Substances
PBT	Persistent, Bioaccumulative and Toxic
STEL	Short term exposure limit
TWA	Time Weighted Average (TWA):
vPvB	very Persistent and very Bioaccumulative

Restrictions on use

Do not use for medical-clinical purposes.

Further information

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Significant change from previous version is denoted with a double bar.

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