SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Krytox™ GPL 226

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

1.1 Product identifier
Trade name : Krytox™ GPL 226
SDS-Identcode : 130000024227

1.2 Relevant identified uses of the substance or mixture and uses advised against
Use of the Substance/Mixture : Lubricant
Recommended restrictions on use : For industrial use only. Do not use or resell Chemours™ materials in medical applications involving implantation in the human body or contact with internal body fluids or tissues unless agreed to by Seller in a written agreement covering such use. For further information, please contact your Chemours representative.

1.3 Details of the supplier of the safety data sheet
Company : Chemours Netherlands B.V.
Baanhoekweg 22
3313 LA Dordrecht Netherlands
Telephone : +31-(0)-78-630-1011
Telefax : +31-78-6163737
E-mail address of person responsible for the SDS : sds-support@chemours.com

1.4 Emergency telephone number
+(44)-870-8200418 (CHEMTREC - Recommended)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Classification (REGULATION (EC) No 1272/2008)
Not a hazardous substance or mixture.

2.2 Label elements
Labelling (REGULATION (EC) No 1272/2008)
Not a hazardous substance or mixture.

Additional Labelling
EUH210 Safety data sheet available on request.
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.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

<table>
<thead>
<tr>
<th>Components</th>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Classification</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sodium nitrite</td>
<td>7632-00-0</td>
<td>231-555-9</td>
<td>Ox. Sol. 2; H272</td>
<td>&gt;= 1 - &lt; 2.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>007-010-00-4</td>
<td></td>
<td>Acute Tox. 3; H301</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Eye Irrit. 2; H319</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Aquatic Acute 1; H400</td>
<td></td>
</tr>
</tbody>
</table>

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

Protection of first-aiders: No special precautions are necessary for first aid responders.

If inhaled: If inhaled, remove to fresh air. Get medical attention if symptoms occur.

In case of skin contact: Wash with water and soap as a precaution. Get medical attention if symptoms occur.

In case of eye contact: Flush eyes with water as a precaution. Get medical attention if irritation develops and persists.

If swallowed: If swallowed, DO NOT induce vomiting. Get medical attention if symptoms occur. Rinse mouth thoroughly with water.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms: Inhalation may provoke the following symptoms:
Irritation
Lung oedema

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 and supportively.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Not applicable
Will not burn

Unsuitable extinguishing media : Not applicable
Will not burn

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : Exposure to combustion products may be a hazard to health.

Hazardous combustion products : Hydrogen fluoride
carbonyl fluoride
potentially toxic fluorinated compounds
aerosolized particulates
Carbon oxides
Nitrogen oxides (NOx)
Metal oxides

5.3 Advice for firefighters

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use water spray to cool unopened containers.
Remove undamaged containers from fire area if it is safe to do so.
Evacuate area.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Follow safe handling advice and personal protective equipment recommendations.

6.2 Environmental precautions

Environmental precautions : Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.
6.3 Methods and material for containment and cleaning up

Methods for cleaning up: Soak up with inert absorbent material.
For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent.
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

6.4 Reference to other sections
See sections: 7, 8, 11, 12 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures: See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation: Use only with adequate ventilation.

Advice on safe handling: Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment.
Take care to prevent spills, waste and minimize release to the environment.

Hygiene measures: Ensure that eye flushing systems and safety showers are located close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers: Keep in properly labelled containers. Store in accordance with the particular national regulations.

Advice on common storage: No special restrictions on storage with other products.

Further information on storage stability: No decomposition if stored and applied as directed.

7.3 Specific end use(s)

Specific use(s): No data available
### SECTION 8: Exposure controls/personal protection

#### 8.1 Control parameters

Contains no substances with occupational exposure limit values.

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrofluoric acid</td>
<td>7664-39-3</td>
<td>TWA</td>
<td>1.8 ppm 1.5 mg/m³</td>
<td>2000/39/EC</td>
</tr>
<tr>
<td>Further information</td>
<td></td>
<td>STEL</td>
<td>3 ppm 2.5 mg/m³</td>
<td>2000/39/EC</td>
</tr>
<tr>
<td>Carbonyl difluoride</td>
<td>353-50-4</td>
<td>TWA</td>
<td>2.5 mg/m³</td>
<td>2000/39/EC</td>
</tr>
<tr>
<td>Further information</td>
<td></td>
<td>STEL</td>
<td>3 ppm 2.5 mg/m³</td>
<td>GB EH40</td>
</tr>
<tr>
<td>Carbon dioxide</td>
<td>124-38-9</td>
<td>TWA</td>
<td>5,000 ppm 9,000 mg/m³</td>
<td>2006/15/EC</td>
</tr>
<tr>
<td>Further information</td>
<td></td>
<td>STEL</td>
<td>15,000 ppm 27,400 mg/m³</td>
<td>GB EH40</td>
</tr>
<tr>
<td>Carbon monoxide</td>
<td>630-08-0</td>
<td>TWA</td>
<td>30 ppm 35 mg/m³</td>
<td>GB EH40</td>
</tr>
<tr>
<td>Further information</td>
<td></td>
<td>STEL</td>
<td>200 ppm 232 mg/m³</td>
<td>GB EH40</td>
</tr>
</tbody>
</table>
| Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

<table>
<thead>
<tr>
<th>Substance name</th>
<th>End Use</th>
<th>Exposure routes</th>
<th>Potential health effects</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium nitrite</td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>2 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Inhalation</td>
<td>Acute systemic effects</td>
<td>2 mg/m³</td>
</tr>
</tbody>
</table>
Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

<table>
<thead>
<tr>
<th>Substance name</th>
<th>Environmental Compartment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium nitrite</td>
<td>Fresh water</td>
<td>0.005 mg/l</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>0.006 mg/l</td>
</tr>
<tr>
<td></td>
<td>Intermittent use/release</td>
<td>0.005 mg/l</td>
</tr>
<tr>
<td></td>
<td>Sewage treatment plant</td>
<td>21 mg/l</td>
</tr>
<tr>
<td></td>
<td>Fresh water sediment</td>
<td>0.019 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Marine sediment</td>
<td>0.022 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>0.001 mg/kg dry weight (d.w.)</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Engineering measures
Processing may form hazardous compounds (see section 10). Ensure adequate ventilation, especially in confined areas. Minimize workplace exposure concentrations.

Personal protective equipment
Eye protection: Wear the following personal protective equipment:
   Safety glasses

Hand protection
   Remarks: Wash hands before breaks and at the end of workday.

Skin and body protection: Skin should be washed after contact.

Respiratory protection: Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.
Filter type: Combined particulates, acidic gas/vapour and organic vapour type (AE-P)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties
Appearance: Grease
Colour: white
Odour: odourless
Odour Threshold: No data available
pH: 7
Melting point/freezing point: 320 °C
### INITIAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial boiling point and boiling range</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Will not burn</td>
</tr>
<tr>
<td>Upper explosion limit / Upper flammability limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower explosion limit / Lower flammability limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Relative vapour density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.89 - 1.93 (24 °C)</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td></td>
</tr>
<tr>
<td>Water solubility</td>
<td>insoluble</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>320 °C</td>
</tr>
<tr>
<td>Viscosity</td>
<td></td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>The substance or mixture is not classified as oxidizing.</td>
</tr>
</tbody>
</table>

### 9.2 Other information

- **Particle size**: No data available

### SECTION 10: Stability and reactivity

#### 10.1 Reactivity

Not classified as a reactivity hazard.

#### 10.2 Chemical stability

Stable under normal conditions.

#### 10.3 Possibility of hazardous reactions

- **Hazardous reactions**: Hazardous decomposition products will be formed at elevated temperatures.
10.4 Conditions to avoid
Conditions to avoid: None known.

10.5 Incompatible materials
Materials to avoid: None.

10.6 Hazardous decomposition products
Thermal decomposition:
- Hydrofluoric acid
- Carbonyl difluoride
- Carbon dioxide
- Carbon monoxide

SECTION 11: Toxicological information

11.1 Information on toxicological effects
Information on likely routes of exposure:
- Skin contact
- Ingestion
- Eye contact

Acute toxicity
Not classified based on available information.

Product:
Acute oral toxicity:
- Acute toxicity estimate: >2,000 mg/kg
- Method: Calculation method

Components:
Sodium nitrite:
Acute oral toxicity: LD50 (Rat): 180 mg/kg
Acute inhalation toxicity:
- LC50 (Rat): 5.5 mg/l
- Exposure time: 4 h
- Test atmosphere: dust/mist

Skin corrosion/irritation
Not classified based on available information.

Components:
Sodium nitrite:
Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation

Serious eye damage/eye irritation
Not classified based on available information.
Components:

Sodium nitrite:
Species: Rabbit
Method: OECD Test Guideline 405
Result: Irritation to eyes, reversing within 21 days

Respiratory or skin sensitisation

Skin sensitisation
Not classified based on available information.

Respiratory sensitisation
Not classified based on available information.

Germ cell mutagenicity
Not classified based on available information.

Components:

Sodium nitrite:
Genotoxicity in vitro:
Test Type: Bacterial reverse mutation assay (AMES)
Result: positive
Test Type: In vitro mammalian cell gene mutation test
Result: positive

Genotoxicity in vivo:
Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Mouse
Application Route: Intraperitoneal injection
Result: negative
Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Rat
Application Route: Intraperitoneal injection
Result: negative

Carcinogenicity
Not classified based on available information.

Components:

Sodium nitrite:
Species: Rat
Application Route: Ingestion
Exposure time: 2 Years
Result: negative

Reproductive toxicity
Not classified based on available information.
Components:

Sodium nitrite:

Effects on fertility: Test Type: Two-generation reproduction toxicity study
Species: Mouse
Application Route: Ingestion
Result: negative

Effects on foetal development: Test Type: Embryo-foetal development
Species: Rat
Application Route: Ingestion
Result: negative

STOT - single exposure
Not classified based on available information.

STOT - repeated exposure
Not classified based on available information.

Repeated dose toxicity

Components:

Sodium nitrite:
Species: Rat
NOAEL: 10 mg/kg
Application Route: Ingestion
Exposure time: 2 yr

Aspiration toxicity
Not classified based on available information.

Experience with human exposure

Product:
Eye contact: Symptoms: Irritation, Discomfort, Blurred vision

SECTION 12: Ecological information

12.1 Toxicity

Components:

Sodium nitrite:
Toxicity to fish: LC50 (Oncorhynchus mykiss (rainbow trout)): 0.54 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): 15.4 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae: EC50 (Scenedesmus capricornutum (fresh water algae)): > 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

NOEC (Scenedesmus capricornutum (fresh water algae)): 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

M-Factor (Acute aquatic toxicity): 1

Toxicity to microorganisms: EC50 : 281 mg/l
Exposure time: 48 h

Toxicity to fish (Chronic toxicity): NOEC: 21 mg/l
Exposure time: 30 d
Species: Cyprinus carpio (Carp)
Method: OECD Test Guideline 210

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity): NOEC: 9.86 mg/l
Exposure time: 80 d
Species: Penaeid Shrimp

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
Not relevant

12.6 Other adverse effects
No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product: Dispose of in accordance with local regulations.
According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal. If not otherwise specified: Dispose of as unused product.
SECTION 14: Transport information

14.1 UN number
   Not regulated as a dangerous good

14.2 UN proper shipping name
   Not regulated as a dangerous good

14.3 Transport hazard class(es)
   Not regulated as a dangerous good

14.4 Packing group
   Not regulated as a dangerous good

14.5 Environmental hazards
   Not regulated as a dangerous good

14.6 Special precautions for user
   Not applicable

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code
   Remarks : Not applicable for product as supplied.

SECTION 15: Regulatory information

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

   REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).
   : Not applicable

   REACH - List of substances subject to authorisation (Annex XIV)
   : Not applicable

   Regulation (EC) No 1005/2009 on substances that deplete the ozone layer
   : Not applicable

   Regulation (EC) No 850/2004 on persistent organic pollutants
   : Not applicable

   Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals
   : Not applicable

   REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)
   : Not applicable

   Not applicable

15.2 Chemical safety assessment
A Chemical Safety Assessment has not been carried out.
SECTION 16: Other information

Other information: Krytox™ and any associated logos are trademarks or copyrights of The Chemours Company FC, LLC. Chemours™ and the Chemours Logo are trademarks of The Chemours Company. Before use read Chemours safety information. For further information contact the local Chemours office or nominated distributors.

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

Full text of H-Statements

H272: May intensify fire; oxidizer.
H301: Toxic if swallowed.
H319: Causes serious eye irritation.
H400: Very toxic to aquatic life.

Full text of other abbreviations

Acute Tox.: Acute toxicity
Aquatic Acute: Short-term (acute) aquatic hazard
Eye Irrit.: Eye irritation
Ox. Sol.: Oxidizing solids
2006/15/EC: Europe. Indicative occupational exposure limit values
GB EH40: UK. EH40 WEL - Workplace Exposure Limits
2000/39/EC / TWA: Limit Value - eight hours
2000/39/EC / STEL: Short term exposure limit
2006/15/EC / TWA: Limit Value - eight hours
2017/164/EU / STEL: Short term exposure limit
2017/164/EU / TWA: Limit Value - eight hours
GB EH40 / TWA: Long-term exposure limit (8-hour TWA reference period)
GB EH40 / STEL: Short-term exposure limit (15-minute reference period)

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equip-
Further information


The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user’s end product, if applicable.

GB / EN