

## Krytox<sup>™</sup> GPL 222

Versi 6.0	ion	Revision Date: 11/07/2018		98 Number: 88733-00006	Date of last issue: 05/29/2018 Date of first issue: 06/26/2017			
SECTION 1. IDENTIFICATION								
Product name		:	Krytox™ GPL 222					
	Produc	t code	:	D12429279				
:	SDS-Id	entcode	:	130000031509				
	Manufa	acturer or supplier's o	deta	iils				
	Compa	ny name of supplier	:	The Chemours Company FC, LLC				
	Address		:	1007 Market Street Wilmington, DE 19899 United States of America (USA)				
	Telephone		:	1-844-773-CHEM (outside the U.S. 1-302-773-1000)				
	Emergency telephone		:	Medical emergency: 1-866-595-1473 (outside the U.S. 1-302-773-2000) ; Transport emergency: +1-800-424-9300 (outside the U.S. +1-703-527-3887)				
	Recom	mended use of the c	chemical and restrictions on use		ons on use			
	Recommended use		:	Lubricant				
	Restrict	tions on use	:	tions involving imp internal body fluid written agreemen	only. ell Chemours™ materials in medical applica- blantation in the human body or contact with s or tissues unless agreed to by Seller in a t covering such use. For further information, ur Chemours representative.			

#### **SECTION 2. HAZARDS IDENTIFICATION**

#### GHS classification in accordance with 29 CFR 1910.1200

Not a hazardous substance or mixture.

#### **GHS** label elements

Not a hazardous substance or mixture.

#### Other hazards

The thermal decomposition vapors of fluorinated plastics may cause polymer fume fever with flulike symptoms in humans, especially when smoking contaminated tobacco.

#### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

#### Components

Chemical name	CAS-No.	Concentration (% w/w)
Sodium nitrite	7632-00-0	>= 1 - < 5



# Krytox™ GPL 222

Version	Revision Date:	SDS Number:	Date of last issue: 05/29/2018
6.0	11/07/2018	1788733-00006	Date of first issue: 06/26/2017

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASUF	SECTION 4. FIRST AID MEASURES						
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.					
Most important symptoms and effects, both acute and delayed	:	Inhalation may provoke the following symptoms: Irritation Lung edema Eye contact may provoke the following symptoms Blurred vision Discomfort Lachrymation Skin contact may provoke the following symptoms: Irritation Redness					
Protection of first-aiders	:	No special precautions are necessary for first aid responders.					
Notes to physician	:	Treat symptomatically and supportively.					

#### **SECTION 5. FIRE-FIGHTING MEASURES**

Suitable extinguishing media	:	Not applicable Will not burn
Unsuitable extinguishing media	:	Not applicable Will not burn
Specific hazards during fire fighting	:	Exposure to combustion products may be a hazard to health.
Hazardous combustion prod- ucts	:	Hydrogen fluoride carbonyl fluoride potentially toxic fluorinated compounds aerosolized particulates Carbon oxides Nitrogen oxides (NOx) Metal oxides
Specific extinguishing meth- ods	:	Use extinguishing measures that are appropriate to local cir- cumstances and the surrounding environment.



Version 6.0	Revision Date: 11/07/2018		S Number: 88733-00006	Date of last issue: 05/29/2018 Date of first issue: 06/26/2017			
			Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is sa so. Evacuate area.				
	ial protective equipment e-fighters	:	Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.				
SECTION	6. ACCIDENTAL RELE	ASI	E MEASURES				
tive e	Personal precautions, protec- tive equipment and emer- gency procedures		Follow safe handling advice and personal protective equipment recommendations.				
Envir	Environmental precautions		Prevent further le Retain and dispo	ne environment must be avoided. eakage or spillage if safe to do so. ose of contaminated wash water. should be advised if significant spillages ned.			
	Methods and materials for containment and cleaning up		Soak up with inert absorbent material. For large spills, provide diking or other appropriate containment to keep material from spreading. If diked materi 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 item 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.				

### SECTION 7. HANDLING AND STORAGE

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.	
Conditions for safe storage	:	Keep in properly labeled containers. Store in accordance with the particular national regulations.	
Materials to avoid	:	No special restrictions on storage with other products.	



## Krytox<sup>™</sup> GPL 222

Version	Revision Date: 11/07/2018	SDS Number:	Date of last issue: 05/29/2018
6.0		1788733-00006	Date of first issue: 06/26/2017
	er information on stor- tability	: No decomposition	on if stored and applied as directed.

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

#### Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

#### Occupational exposure limits of decomposition products

Components	CAS-No.	Value type (Form of exposure)	Control parame- ters / Permissible concentration	Basis
Hydrofluoric acid	7664-39-3	TWA	3 ppm 2.5 mg/m <sup>3</sup>	NIOSH REL
		С	6 ppm 5 mg/m <sup>3</sup>	NIOSH REL
		TWA	3 ppm	OSHA Z-2
		TWA	0.5 ppm (Fluorine)	ACGIH
		С	2 ppm (Fluorine)	ACGIH
Carbonyl difluoride	353-50-4	TWA	2 ppm	ACGIH
		STEL	5 ppm	ACGIH
		ST	5 ppm 15 mg/m <sup>3</sup>	NIOSH REL
		TWA	2 ppm 5 mg/m <sup>3</sup>	NIOSH REL
Carbon dioxide	124-38-9	TWA	5,000 ppm	ACGIH
		STEL	30,000 ppm	ACGIH
		TWA	5,000 ppm 9,000 mg/m <sup>3</sup>	OSHA Z-1
		TWA	5,000 ppm 9,000 mg/m <sup>3</sup>	NIOSH REL
		ST	30,000 ppm 54,000 mg/m <sup>3</sup>	NIOSH REL
Carbon monoxide	630-08-0	TWA	25 ppm	ACGIH
		TWA	35 ppm 40 mg/m <sup>3</sup>	NIOSH REL
		С	200 ppm 229 mg/m <sup>3</sup>	NIOSH REL
		TWA	50 ppm 55 mg/m <sup>3</sup>	OSHA Z-1

Engineering measures

Processing may form hazardous compounds (see section 10).

Ensure adequate ventilation, especially in confined areas. Minimize workplace exposure concentrations.

:



Version 6.0	Revision Date: 11/07/2018		DS Number: 788733-00006	Date of last issue: 05/29/2018 Date of first issue: 06/26/2017			
Pers	onal protective equip	ment					
Resp	Respiratory protection		: General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.				
Hand	Hand protection						
R	emarks	:	Wash hands befo	re breaks and at the end of workday.			
Eye	Eye protection Skin and body protection		Wear the following Safety glasses	g personal protective equipment:			
Skin			Skin should be wa	ashed after contact.			
Hygi	ene measures	:	located close to the When using do not	ushing systems and safety showers are ne working place. ot eat, drink or smoke. ed clothing before re-use.			

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Grease
Color	:	white
Odor	:	odorless
Odor Threshold	:	No data available
рН	:	7
Melting point/freezing point	:	608 °F / 320 °C
Initial boiling point and boiling range	:	No data available
Flash point	:	Not applicable
Evaporation rate	:	Not applicable
Flammability (solid, gas)	:	Will not burn
Upper explosion limit / Upper flammability limit	:	No data available



Vers 6.0	sion	Revision Date: 11/07/2018	-	S Number: 8733-00006	Date of last issue: 05/29/2018 Date of first issue: 06/26/2017
	Lower explosion limit / Lower flammability limit		:	No data available	
	Vapor pressure		:	Not applicable	
	Relative	e vapor density	:	Not applicable	
	Relative	e density	:	1.89 - 1.93	
	Solubili Wat	ty(ies) er solubility	:	insoluble	
	Partition octanol	n coefficient: n- /water	:	Not applicable	
	Autoign	ition temperature	:	No data available	)
	Decom	position temperature	:	608 °F / 320 °C	
	Viscosi Visc	ty osity, kinematic	:	Not applicable	
	Explosi	ve properties	:	Not explosive	
	Oxidizir	ng properties	:	The substance of	mixture is not classified as oxidizing.
	Particle	size	:	No data available	

### SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Not classified as a reactivity hazard.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reac- tions	:	Hazardous decomposition products will be formed at elevated temperatures.
Conditions to avoid	:	None known.
Incompatible materials	:	None.

### Hazardous decomposition products

Thermal decomposition	: Hydrofluoric acid
	Carbonyl difluoride
	Carbon dioxide
	Carbon monoxide



# Krytox™ GPL 222

ersion .0	Revision Date: 11/07/2018		OS Number: 88733-00006	Date of last issue: 05/29/2018 Date of first issue: 06/26/2017
ECTION	11. TOXICOLOGICA	LINF	ORMATION	
	<b>nation on likely rout</b> contact tion	es of	exposure	
Eye c	ontact			
	e toxicity assified based on ava	ailable	information.	
<u>Produ</u>				
Acute	oral toxicity	:	Assessment: TI icity	ne substance or mixture has no acute oral tox
Acute	inhalation toxicity	:	Acute toxicity e Exposure time: Test atmosphere Method: Calculation	re: dust/mist
Comp	oonents:			
Sodiu	ım nitrite:			
Acute	oral toxicity	:	LD50 (Rat): 180	) mg/kg
Acute	inhalation toxicity	:	LC50 (Rat): 5.5 Exposure time: Test atmospher	4 h
-	corrosion/irritation			
Not cl	assified based on ava	ailable	information.	
Comp	oonents:			
Sodiu	ım nitrite:			
Speci Metho Resul	bd	:	Rabbit OECD Test Gu No skin irritatior	
	<b>us eye damage/eye</b> assified based on ava			
Com	oonents:			
11	ım nitrite:			
Speci		:	Rabbit	
Resul Metho		:	Irritation to eyes OECD Test Gu	s, reversing within 21 days ideline 405
Resp	iratory or skin sensi	tizatic	n	
-	sensitization			
	assified based on ava	ailabla	information	



rsion )	Revision Date: 11/07/2018	SDS Number: 1788733-00006	Date of last issue: 05/29/2018 Date of first issue: 06/26/2017	
Resp	iratory sensitization	ı		
-	lassified based on av			
Germ	cell mutagenicity			
Not cl	lassified based on av	ailable information.		
Com	<u>oonents:</u>			
Sodiu	um nitrite:			
Ц	toxicity in vitro	: Test Type: Bac Result: positive	terial reverse mutation assay (AMES)	
		Test Type: In vi Result: positive	itro mammalian cell gene mutation test	
Geno	toxicity in vivo	: Test Type: Mar cytogenetic ass Species: Mouse		
			ute: Intraperitoneal injection	
		Test Type: Mar cytogenetic ass Species: Rat	nmalian erythrocyte micronucleus test (in viv say)	
			ute: Intraperitoneal injection e	
<b>II</b>				
	nogenicity lassified based on av	vailable information		
	oonents:			
<b>U</b> L	um nitrite:	<b>D</b> .		
Speci Applic	es cation Route	: Rat : Ingestion		
	sure time	: 2 Years		
Resu	łt	: negative		
IARC	Group 2A:	Probably carcinogenic	to humans	
	Sodium nil	trite	7632-00-0 s that result in endogenous nitrosation)	
II OSH/		nent of this product press s list of regulated carcin	sent at levels greater than or equal to 0.1% is ogens.	
NTP		No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.		
IN I F				
Repro	oductive toxicity lassified based on av	ailable information.		
<b>Repr</b> Not cl	lassified based on av	ailable information.		
Repro Not cl <u>Com</u>	lassified based on av ponents:	ailable information.		
Repro Not cl <u>Com</u> Sodiu	lassified based on av		p-generation reproduction toxicity study	



Versio 6.0	on Revision Date: 11/07/2018		DS Number: 88733-00006	Date of last issue: 05/29/2018 Date of first issue: 06/26/2017
			Species: Mouse Application Route Result: negative	: Ingestion
E	Effects on fetal development	:	Test Type: Embry Species: Rat Application Route Result: negative	o-fetal development : Ingestion
	STOT-single exposure Not classified based on availa	ble	information.	
	STOT-repeated exposure Not classified based on availa	ble	information.	
F	Repeated dose toxicity			
<u>(</u>	Components:			
5	Sodium nitrite:			
۲ ب	Species NOAEL Application Route Exposure time	:	Rat 10 mg/kg Ingestion 2 y	
	Aspiration toxicity Not classified based on availa	ble	information.	
SECT	ION 12. ECOLOGICAL INFO	DRN	<b>IATION</b>	
E	Ecotoxicity			
C	Components:			
	Sodium nitrite:			
	Foxicity to fish	:	LC50 (Oncorhync Exposure time: 96	hus mykiss (rainbow trout)): 0.54 mg/l 3 h
	Foxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia m Exposure time: 48 Method: OECD T	
	Foxicity to algae	:	EC50 (Scenedesi 100 mg/l Exposure time: 72 Method: OECD T	
			NOEC (Scenedes mg/l Exposure time: 72	mus capricornutum (fresh water algae)): 100

Exposure time: 72 h Method: OECD Test Guideline 201



# Krytox<sup>™</sup> GPL 222

Version 6.0	Revision Date: 11/07/2018		DS Number: 88733-00006	Date of last issue: 05/29/2018 Date of first issue: 06/26/2017
			Method: OECD T	est Guideline 210
	y to daphnia and other c invertebrates (Chron- ity)	:	NOEC (Penaeid S Exposure time: 80	Shrimp): 9.86 mg/l ) d
Toxicit	y to microorganisms	:	EC50: 281 mg/l Exposure time: 4{	3 h
	tence and degradabili	ity		
Bioac	cumulative potential a available			
	<b>ty in soil</b> a available			
	adverse effects a available			

### SECTION 13. DISPOSAL CONSIDERATIONS

#### **Disposal methods**

Waste from residues	:	Dispose of in accordance with local regulations.
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**

#### **International Regulations**

#### UNRTDG

Not regulated as a dangerous good

### IATA-DGR

Not regulated as a dangerous good

#### IMDG-Code

Not regulated as a dangerous good

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

Not applicable for product as supplied.

#### **Domestic regulation**

#### 49 CFR

UN/ID/NA number Proper shipping name	:	UN 3077 Environmentally hazardous substance, solid, n.o.s. (Sodium nitrite)
Class Packing group	:	111
Labels		CLASS 9



## Krytox<sup>™</sup> GPL 222

Version	Revision Date: 11/07/2018	SDS Number:	Date of last issue: 05/29/2018
6.0		1788733-00006	Date of first issue: 06/26/2017
ERG ( Marine Rema	e pollutant	SIZES WHER	NFORMATION ONLY APPLIES TO PACKAGE E THE HAZARDOUS SUBSTANCE MEETS ABLE QUANTITY.

#### Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

#### SECTION 15. REGULATORY INFORMATION

#### **EPCRA - Emergency Planning and Community Right-to-Know**

#### **CERCLA Reportable Quantity**

Components	CAS-No.	Component RQ	Calculated product RQ
		(lbs)	(lbs)
Sodium nitrite	7632-00-0	100	5050
Sodium hydroxide	1310-73-2	1000	*

\*: Calculated RQ exceeds reasonably attainable upper limit.

#### SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

No SARA Hazards

This material does not contain any components with a section 302 EHS TPQ.

	•			
SARA 313	:	5	nponents are subject to ARA Title III, Section 3	
		Sodium nitrite	7632-00-0	>= 1 - < 5 %

#### **US State Regulations**

SARA 311/312 Hazards

#### Pennsylvania Right To Know

PFPE fluid Fluoropolymer Sodium nitrite Trade secret Trade secret 7632-00-0

#### California Prop. 65

WARNING: This product can expose you to chemicals including pentadecafluorooctanoic acid, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

California List of Hazardous Substa	inces	
Sodium nitrite		7632-00-0
Additional regulatory information		
Sodium nitrite	7632-00-0	



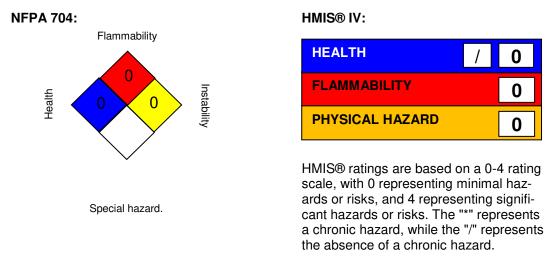
## Krytox<sup>™</sup> GPL 222

Version	Revision Date:	SDS Number:	Date of last issue: 05/29/2018
6.0	11/07/2018	1788733-00006	Date of first issue: 06/26/2017

The United States Environmental Protection Agency (USEPA) has established a Significant New Use Rule (SNUR) for one of the components in this product. See 40 CFR § 721.4740

#### SECTION 16. OTHER INFORMATION





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Chemours<sup>™</sup> 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. All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

#### Full text of other abbreviations

ACGIH NIOSH REL OSHA Z-1	:	
OSHA Z-2	:	USA. Occupational Exposure Limits (OSHA) - Table Z-2
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
ACGIH / C	:	Ceiling limit
NIOSH REL / TWA	:	Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / ST	:	STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
NIOSH REL / C OSHA Z-1 / TWA OSHA Z-2 / TWA		Ceiling value not be exceeded at any time. 8-hour time weighted average 8-hour time weighted average

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation,



## Krytox<sup>™</sup> GPL 222

Version	Revision Date:	SDS Number:	Date of last issue: 05/29/2018
6.0	11/07/2018	1788733-00006	Date of first issue: 06/26/2017

and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada): ECx - Concentration associated with x% response: EHS - Extremely Hazardous Substance; 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; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC -International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG -United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Material Safety Data Sheet	:	Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agen- cy, http://echa.europa.eu/
Revision Date	:	11/07/2018

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

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.

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