

Versio 2.0	on	Revision Date: 10/24/2017		0S Number: 88595-00002	Date of last issue: 06/26/2017 Date of first issue: 06/26/2017			
SECT	ION 1.	IDENTIFICATION						
Р	Product name		:	Krytox™ GPL 220, Krytox™ GPL 220				
Р	Product	code	:	D12430257, D124	430257			
S	SDS-Id	entcode	:	130000031507				
N	/ lanufa	cturer or supplier's o	deta	ils				
C	Compa	ny name of supplier	:					
A	Address		:	1007 Market Street Wilmington, DE 19899 United States of America (USA)				
т	Telephone		:	1-844-773-CHEM (outside the U.S. 1-302-773-1000)				
E	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)				
R	Recom	mended use of the cl	hen	nical and restriction	ons on use			
R	Recomi	mended use	:	Lubricant				
R	Restrict	ions 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

Hazardous ingredients

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



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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		Water spray Alcohol-resistant foam Carbon dioxide (CO2) Dry chemical
Unsuitable extinguishing media	:	None known.
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-	:	Use extinguishing measures that are appropriate to local cir-



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00	ds			cumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to de so. Evacuate area.		
Special protective equipment for fire-fighters		:	Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.			
SECT	ION 6.	ACCIDENTAL RELE	ASE	E MEASURES		
tiv	Personal precautions, protec- tive equipment and emer- gency procedures		:	Follow safe handli equipment recomi	ng advice and personal protective nendations.	
E	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.		
		and materials for nent and cleaning up	:	For large spills, pr containment to ke can be pumped, s container. Clean up remainin absorbent. Local or national r disposal of this ma employed in the c determine which r Sections 13 and 1	absorbent material. ovide diking or other appropriate ep material from spreading. If diked material tore recovered material in appropriate og materials from spill with suitable egulations may apply to releases and aterial, as well as those materials and items eanup of releases. You will need to egulations are applicable. 5 of this SDS provide information regarding tional 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	:	Do not store with the following product types:



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Furthe	r information on stor-	Strong oxidizing	agents
age st	ability	: No decompositio	n 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.

Hazardous components without workplace control parameters

Ingredients	CAS-No.
Sodium nitrite	7632-00-0

Occupational exposure limits of decomposition products

Ingredients	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 ³	NIOSH REL
		С	6 ppm 5 mg/m ³	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 ³	NIOSH REL
		TWA	2 ppm 5 mg/m ³	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 ³	OSHA Z-1
		TWA	5,000 ppm 9,000 mg/m ³	NIOSH REL
		ST	30,000 ppm 54,000 mg/m ³	NIOSH REL
Carbon monoxide	630-08-0	TWA	25 ppm	ACGIH
		TWA	35 ppm 40 mg/m ³	NIOSH REL
		С	200 ppm 229 mg/m ³	NIOSH REL
		TWA	50 ppm 55 mg/m ³	OSHA Z-1



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Engineering measures		:	Processing may form hazardous compounds (see section 10). Ensure adequate ventilation, especially in confined areas. Minimize workplace exposure concentrations.				
	Persor	nal protective equipm	ent				
	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 protection		protection					
	Ren	narks	:	Wash hands befo	re breaks and at the end of workday.		
	Eye pro	otection	:	Wear the following Safety glasses	g personal protective equipment:		
	Skin ar	nd body protection	:	Skin should be wa	ashed after contact.		
Hygiene 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	:	320 °C
Initial boiling point and boiling range	:	No data available
Flash point	:	does not flash



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	Evapora	ation rate	:	Not applicable	
	Flamma	ability (solid, gas)	:	No data available	
		explosion limit / Upper bility limit	:	No data available	
		explosion limit / Lower bility limit	:	No data available	
	Vapor p	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	:	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	:	Can react with strong oxidizing agents. Hazardous decomposition products will be formed at elevated temperatures.
Conditions to avoid	:	None known.
Incompatible materials	:	Oxidizing agents
Hazardous decomposition p Thermal decomposition		ucts Hydrofluoric acid Carbonyl difluoride Carbon dioxide

Carbon monoxide

SAFETY DATA SHEET



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ECTION	11. TOXICOLOGICA		ORMATION	
Skin o Inges	mation on likely rou t contact tion contact	tes of	exposure	
Not cl	e toxicity lassified based on ava	ailable	information.	
<u>Produ</u> Acute	uct: e oral toxicity	:	Assessment: T icity	he substance or mixture has no acute oral tox-
Acute	inhalation toxicity	:	Acute toxicity e Exposure time: Test atmosphe Method: Calcul	re: dust/mist
Ingre	dients:			
Sodiu	um nitrite:			
Acute	e oral toxicity	:	LD50 (Rat): 18	0 mg/kg
Acute	inhalation toxicity	:	LC50 (Rat): 5.5 Exposure time: Test atmosphe	4 h
-	corrosion/irritation			
Not c	lassified based on av	ailable	information.	
Ingre	dients:			

Sodium nitrite:

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

Serious eye damage/eye irritation

Not classified based on available information.

Ingredients:

Sodium nitrite:

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



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Resp	iratory or skin sensiti	zation							
-	sensitization assified based on avail	lable information.							
-	Respiratory sensitization Not classified based on available information.								
Germ cell mutagenicity Not classified based on available information.									
Ingre	dients:								
Sodiu	um nitrite:								
Geno	toxicity in vitro	: Test Type: Bact Result: positive	erial reverse mutation assay (AMES)						
		Test Type: In vit Result: positive	tro mammalian cell gene mutation test						
Geno	toxicity in vivo	: Test Type: Mam cytogenetic ass Species: Mouse							
			te: Intraperitoneal injection						
		Test Type: Mam cytogenetic ass Species: Rat	nmalian erythrocyte micronucleus test (in vivo ay)						
		Application Rou Result: negative	te: Intraperitoneal injection						
	nogenicity assified based on avail	lable information							
	dients:								
	um nitrite:								
Speci Applic Expos	es: Rat cation Route: Ingestion sure time: 2 Years It: negative								
IARC	;	Group 2A: Probabl	y carcinogenic to humans						
		Sodium nitrite	7632-00-0						
OSH	Α		his product present at levels greater than or or OSHA's list of regulated carcinogens.						
NTP			is product present at levels greater than or entified as a known or anticipated carcinoger						



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Not cl	Reproductive toxicity Not classified based on available information. Ingredients:							
	um nitrite: is on fertility	:	Test Type: Two-g Species: Mouse Application Route Result: negative	peneration reproduction toxicity study e: Ingestion				
Effect	s on fetal development	:	Test Type: Embry Species: Rat Application Route Result: negative	vo-fetal development e: Ingestion				

STOT-single exposure

Not classified based on available information.

STOT-repeated exposure

Not classified based on available information.

Repeated dose toxicity

Ingredients:

Sodium nitrite:

Species: Rat NOAEL: 10 mg/kg Application Route: Ingestion Exposure time: 2 y

Aspiration toxicity

Not classified based on available information.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Ingredients:

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



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			mg/l Exposure time: 7	smus capricornutum (fresh water algae)): 100 2 h est Guideline 201	
M-Fao icity)	ctor (Acute aquatic tox-	:	1		
Toxic icity)	Toxicity to fish (Chronic tox- icity)		: NOEC (Cyprinus carpio (Carp)): 21 mg/l Exposure time: 30 d Method: OECD Test Guideline 210		
	ity to daphnia and other ic invertebrates (Chron- city)	:	NOEC (Penaeid S Exposure time: 8		
Toxic	ity to microorganisms	:	EC50: 281 mg/l Exposure time: 44	8 h	
	stence and degradabili Ita available	ty			
	ccumulative potential ta available				
	lity in soil				
No da	ta available				
	adverse effects				
No da	ıta available				

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



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Not a	sport in bulk accordin pplicable for product a estic regulation	•		OL 73/78 and the IBC Code
Prope Class Packi Label ERG	NA number er shipping name ng group s Code e pollutant		(Sodium nitrite) 9 III CLASS 9 171 no THE ABOVE INF	nazardous substance, solid, n.o.s. ORMATION ONLY APPLIES TO PACKAGE THE HAZARDOUS SUBSTANCE MEETS BLE QUANTITY.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

Ingredients	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

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

SARA 311/312 Hazards		No SARA Hazards		
SARA 313	: The following components established by SARA Title		is are subject to reporting levels e III, Section 313:	
		Sodium nitrite	7632-00-0	>= 1 - < 5 %

US State Regulations

Trade secret
Trade secret
7632-00-0

California Prop. 65

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

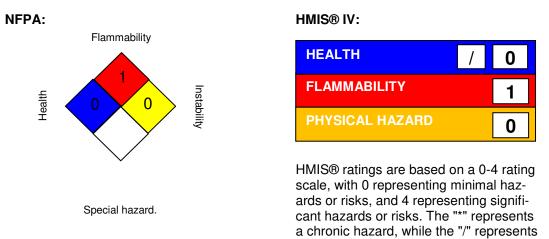
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California List of Hazardous Substances							
Sodium nitrite			7632-00-0				

Additional regulatory information

Sodium nitrite 7632-00-0 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

Further information



the absence of a chronic hazard.

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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	:	USA. ACGIH Threshold Limit Values (TLV) USA. NIOSH Recommended Exposure Limits USA. Occupational Exposure Limits (OSHA) - Table Z-1 Lim- its for Air Contaminants
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	:	Ceiling value not be exceeded at any time.





OSHA Z-2 / TWA

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OSHA Z-1 / TWA		: 8-hour time w	eighted 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, 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	:	Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agen-
Data Sheet		cy, http://echa.europa.eu/

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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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