

according to the Hazardous Products Regulations

Flunixin Liquid (with Alcohol) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 04/06/2024
6.0	07/06/2024	954147-00021	Date of first issue: 10/28/2016

SECTION 1. IDENTIFICATION

Product name	:	Flunixin Liquid (with Alcohol) Formulation
Other means of identification	:	No data available

Manufacturer or supplier's details

Company name of supplier	:	Merck & Co., Inc
Address	:	126 E. Lincoln Avenue
		Rahway, New Jersey U.S.A. 07065
Telephone	:	908-740-4000
Emergency telephone	:	1-908-423-6000
E-mail address	:	EHSDATASTEWARD@merck.com

Recommended use of the chemical and restrictions on use

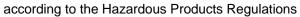
Recommended use	:	Veterinary product
Restrictions on use	:	Not applicable

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accord Flammable liquids	_	h the Hazardous Products Regulations gory 3
Acute toxicity (Oral)	: Cate	gory 4
Acute toxicity (Inhalation)	: Cate	gory 2
Serious eye damage	: Cate	gory 1
Reproductive toxicity	: Cate	gory 1B
Specific target organ toxicity - repeated exposure	: Cate	gory 1 (Gastrointestinal tract, Kidney, Blood)

GHS label elements

Hazard pictograms :		
Signal Word	:	Danger
Hazard Statements	:	 H226 Flammable liquid and vapor. H302 Harmful if swallowed. H318 Causes serious eye damage. H330 Fatal if inhaled. H360FD May damage fertility. May damage the unborn child. H372 Causes damage to organs (Gastrointestinal tract, Kidney, Blood) through prolonged or repeated exposure.





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Precautionary Statements		P202 Do not h and understoo P210 Keep aw and other ignit P260 Do not b P264 Wash sk P270 Do not e P271 Use only P280 Wear pro and face prote	ay from heat, hot surfaces, sparks, open flames ion sources. No smoking. reathe mist or vapors. in thoroughly after handling. at, drink or smoke when using this product. outdoors or in a well-ventilated area. otective gloves, protective clothing, eye protection				
		unwell. Rinse P303 + P361 - all contaminate P304 + P340 - and keep com CENTER. P305 + P351 - water for seve and easy to do CENTER.	 P330 IF SWALLOWED: Call a doctor if you feel mouth. P353 IF ON SKIN (or hair): Take off immediately ed clothing. Rinse skin with water. P310 IF INHALED: Remove person to fresh air fortable for breathing. Immediately call a POISON P338 + P310 IF IN EYES: Rinse cautiously with ral minutes. Remove contact lenses, if present b. Continue rinsing. Immediately call a POISON F exposed or concerned: Get medical attention. 				
		Storage: P405 Store locked up.					
		Disposal: P501 Dispose disposal plant.	of contents and container to an approved waste				
II Othe	r hazards						

Other hazards

Vapors may form explosive mixture with air.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture		Mixture
	•	Mixture

Components

Chemical name	Common Name/Synonym	CAS-No.	Concentration (% w/w)
2-Pyrrolidone	No data availa- ble	616-45-5	35
Benzyl alcohol	Benzenemetha- nol	100-51-6	20.4
1-deoxy-1- (methylamino)-D- glucitol 2-[2-methyl-3- (perfluorome-	No data availa- ble	42461-84-7	16.6



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thyl)a	nilino]nicotinate			
		Cyclohexanol, 5-methyl-2-(1- methylethyl)-, (1R,2S,5R)-	2216-51-5	10
		Isopropyl alco- hol	67-63-0	8

SECTION 4. FIRST AID MEASURES

General advice	:	In the case of accident or if you feel unwell, seek medical advice immediately. When symptoms persist or in all cases of doubt seek medical
If inhaled	:	advice. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
In case of skin contact	:	Get medical attention immediately. In case of contact, immediately flush skin with soap and plenty of water. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse.
In case of eye contact	:	Thoroughly clean shoes before reuse. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lens, if worn.
If swallowed	:	Get medical attention immediately. If swallowed, DO NOT induce vomiting. Get medical attention. Rinse mouth thoroughly with water.
Most important symptoms and effects, both acute and delayed	:	Never give anything by mouth to an unconscious person. Harmful if swallowed. Causes serious eye damage. Fatal if inhaled. May damage fertility. May damage the unborn child. Causes damage to organs through prolonged or repeated
Protection of first-aiders	:	exposure.
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	:	High volume water jet
Specific hazards during fire fighting	:	Do not use a solid water stream as it may scatter and spread fire.



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				Vapors may form	le over considerable distance. explosive mixtures with air. pustion products may be a hazard to health.
	azardo cts	ous combustion prod-	:	Carbon oxides Fluorine compoun Nitrogen oxides (N	
Sp od		extinguishing meth-	:	cumstances and t Use water spray to Remove undamag so.	measures that are appropriate to local cir- he surrounding environment. cool unopened containers. ged containers from fire area if it is safe to do
		protective equipment ighters	:	Evacuate area. In the event of fire Use personal prot	, wear self-contained breathing apparatus. ective equipment.
SECTI	ON 6.	ACCIDENTAL RELE	ASE	E MEASURES	
tiv	ve equ	I precautions, protec- ipment and emer- rocedures	:	Remove all source Follow safe handli	onnel should re-enter the area.
Er	nvironi	mental precautions	:	Prevent spreading oil barriers). Retain and dispos	akage or spillage if safe to do so. g over a wide area (e.g., by containment or e of contaminated wash water. hould be advised if significant spillages
		s and materials for nent and cleaning up	:	Suppress (knock of jet. 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	s should be used. absorbent material. down) gases/vapors/mists with a water spray ovide diking or other appropriate ep material from spreading. If diked material tore recovered material in appropriate ag materials from spill with suitable egulations may apply to releases and aterial, as well as those materials and items leanup of releases. You will need to egulations are applicable. 5 of this SDS provide information regarding tional requirements.

SECTION 7. HANDLING AND STORAGE



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	nnical measures al/Total ventilation	CONTROLS : If sufficient v ventilation. Use explosio	ring measures under EXPOSURE /PERSONAL PROTECTION section. entilation is unavailable, use with local exhaust n-proof electrical, ventilating and lighting equip-
Advi	ice on safe handling	Do not breat Do not swall Do not get in Wash skin th Handle in ac practice, bas assessment Non-sparking Keep contain Keep away f other ignition Take precau Do not eat, co	eyes. oroughly after handling. cordance with good industrial hygiene and safety ed on the results of the workplace exposure g tools should be used. her tightly closed. rom heat, hot surfaces, sparks, open flames and sources. No smoking. tionary measures against static discharges. Irink or smoke when using this product. prevent spills, waste and minimize release to the
Con	ditions for safe storage	: Keep in prop Store locked Keep tightly Keep in a co Store in acco	erly labeled containers. up.
Mate	erials to avoid	: Do not store Strong oxidiz Self-reactive Organic pero Flammable I Flammable s Pyrophoric li Pyrophoric s Self-heating Substances flammable g Explosives Gases	with the following product types: substances and mixtures vides quids olids olids substances and mixtures and mixtures which in contact with water emit

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

C	Components	CAS-No.	Value type (Form of exposure)	Control parame- ters / Permissible concentration	Basis
ç	-deoxy-1-(methylamino)-D- Jlucitol 2-[2-methyl-3- perfluorome-	42461-84-7	TWA	40 µg/m3 (OEB 3)	Internal



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thyl)a	nilino]nicotinate				
	-	Further inform	nation: Skin		
			Wipe limit	400 µg/100 cm ²	Internal
Propa	an-2-ol	67-63-0	STEL	400 ppm 984 mg/m ³	CA AB OEL
			TWA	200 ppm 492 mg/m ³	CA AB OEL
			TWA	200 ppm	CA BC OEL
			STEL	400 ppm	CA BC OEL
			TWAEV	200 ppm	CA QC OEL
			STEV	400 ppm	CA QC OEL
			TWA	200 ppm	ACGIH
			STEL	400 ppm	ACGIH

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sam- pling time	Permissible concentra- tion	Basis
Propan-2-ol	67-63-0	Acetone	Urine	End of shift at end of work- week	40 mg/l	ACGIH BEI

Engineering measures	:	Use appropriate engineering controls and manufacturing technologies to control airborne concentrations (e.g., drip- less quick connections). All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment. Containment technologies suitable for controlling compounds are required to control at source and to prevent migration of the compound to uncontrolled areas (e.g., open-face containment devices). Minimize open handling.
		Use explosion-proof electrical, ventilating and lighting equipment.
Personal protective equipm	ent	
Respiratory protection	:	If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection. Combined particulates and organic vapor type
Hand protection		
Material	:	Chemical-resistant gloves
Remarks	:	Consider double gloving. Take note that the product is flammable, which may impact the selection of hand protection
Eye protection	:	Wear safety glasses with side shields or goggles. If the work environment or activity involves dusty conditions,
Respiratory protection Filter type Hand protection Material Remarks	: : :	 the compound to uncontrolled areas (e.g., open-face containment devices). Minimize open handling. Use explosion-proof electrical, ventilating and lighting equipment. If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection. Combined particulates and organic vapor type Chemical-resistant gloves Consider double gloving. Take note that the product is flammable, which may impact the selection of hand protection. Wear safety glasses with side shields or goggles.



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Skin	and body protection	Wear a facesh potential for di aerosols. : Work uniform Additional bod task being per disposable sui	ols, wear the appropriate goggles. ield or other full face protection if there is a rect contact to the face with dusts, mists, or or laboratory coat. y garments should be used based upon the formed (e.g., sleevelets, apron, gauntlets, ts) to avoid exposed skin surfaces. te degowning techniques to remove potentially clothing.
Hygi	ene measures	eye flushing sy working place. When using do Wash contami The effective of engineering co appropriate de industrial hygie	chemical is likely during typical use, provide ystems and safety showers close to the o not eat, drink or smoke. nated clothing before re-use. operation of a facility should include review of ontrols, proper personal protective equipment, gowning and decontamination procedures, ene monitoring, medical surveillance and the strative controls.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Color	:	yellow
Odor	:	mint-like
Odor Threshold	:	No data available
рН	:	8.0
Melting point/freezing point	:	< -20 °C
Initial boiling point and boiling range	:	No data available
Flash point	:	43.33 °C
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable
Flammability (liquids)	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	No data available



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F	Relative	vapor density	:	No data available	9
F	Relative	edensity	:	No data available	9
[Density		:	1.05 g/cm ³	
\$	Solubilit Wate	y(ies) er solubility	:	No data available	9
		n coefficient: n-	:	Not applicable	
	octanol/ Autoign	water ition temperature	:	No data available	9
[Decomp	oosition temperature	:	No data available	9
N	Viscosit Visco	y osity, kinematic	:	No data available	9
E	Explosiv	ve properties	:	Not explosive	
(Oxidizin	g properties	:	The substance or	r mixture is not classified as oxidizing.
Γ	Molecul	ar weight	:	No data available	9
-	Particle Particle	characteristics size	:	Not applicable	

SECTION 10. STABILITY AND REACTIVITY

Reactivity Chemical stability Possibility of hazardous reac- tions	:	Not classified as a reactivity hazard. Stable under normal conditions. Flammable liquid and vapor. Vapors may form explosive mixture with air. Can react with strong oxidizing agents.
Conditions to avoid Incompatible materials Hazardous decomposition products		Heat, flames and sparks. Oxidizing agents No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation Skin contact Ingestion Eye contact

Acute toxicity Harmful if swallowed.



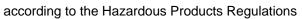
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rsion)	Revision Date: 07/06/2024		S Number: 4147-00021	Date of last issue: 04/06/2024 Date of first issue: 10/28/2016
Fatal	if inhaled.			
Produ	uct:			
Acute	oral toxicity	:	Acute toxicity e Method: Calcul	stimate: 306.94 mg/kg ation method
Acute	inhalation toxicity	:	Acute toxicity e Exposure time: Test atmosphe Method: Calcul	re: dust/mist
Comp	oonents:			
2-Pyr	rolidone:			
Acute	oral toxicity	:		2,000 mg/kg • Test Guideline 401 he substance or mixture has no acute oral to:
Acute	dermal toxicity	:		> 2,000 mg/kg Test Guideline 402 he substance or mixture has no acute derma
'	yl alcohol:			
Acute	oral toxicity	:	LD50 (Rat): 1,6	20 mg/kg
Acute	inhalation toxicity	:	LC50 (Rat): > 4 Exposure time: Test atmosphe Method: OECD	4 h
II 1-deo	xy-1-(methylamino)-D-	alu	citol 2-[2-methy	/I-3-(perfluoromethyl)anilino]nicotinate:
	oral toxicity	:	LD50 (Rat): 53	
			LD50 (Mouse):	176 - 249 mg/kg
			LD50 (Guinea	oig): 488.3 mg/kg
			LD50 (Monkey)	: 300 mg/kg
Acute	inhalation toxicity	:	LC50 (Rat): < 0 Exposure time: Test atmosphe	4 h
	toxicity (other routes of istration)	:		.4 - 185.3 mg/kg ute: Intraperitoneal
				164 - 363 mg/kg ute: Intraperitoneal

L-Menthol:



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Acute	inhalation toxicity	:	Exposure time: Test atmospher	4 h
Acute	dermal toxicity	:	LD50 (Rabbit): Method: OECD	> 5,000 mg/kg Test Guideline 402
Propa	an-2-ol:			
	oral toxicity	:	LD50 (Rat): > 5	,000 mg/kg
Acute	inhalation toxicity	:	LC50 (Rat): > 2 Exposure time: Test atmosphere	6 h
Acute	dermal toxicity	:	LD50 (Rabbit):	> 5,000 mg/kg
Not cla	corrosion/irritation assified based on ava ponents:	ailable	information.	
	rolidone:			
2-Pyr Specie Metho Result	es od	:	Rabbit OECD Test Gui No skin irritatior	
Specie Metho Result	es od t	:	OECD Test Gu	
Specie Metho Result	es od t yl alcohol:	:	OECD Test Gui No skin irritatior	
Specie Metho Result	es od t yl alcohol: es	:	OECD Test Gu	n
Specie Metho Result Benzy	es od t /I alcohol: es od	:	OECD Test Gui No skin irritation Rabbit	n ideline 404
Specie Metho Result Benzy Specie Metho Result 1-deo	es od /I alcohol: es od t xy-1-(methylamino) -		OECD Test Gui No skin irritation Rabbit OECD Test Gui No skin irritation citol 2-[2-methy	n ideline 404
Specie Metho Result Benzy Specie Metho Result	es od t /I alcohol: es od t xy-1-(methylamino) - es		OECD Test Gui No skin irritation Rabbit OECD Test Gui No skin irritation	n ideline 404 า 1-3-(perfluoromethyl)anilino]nicotinate:
Specie Metho Result Specie Metho Result 1-deo	es od t /I alcohol: es t xy-1-(methylamino) - es t		OECD Test Gui No skin irritation Rabbit OECD Test Gui No skin irritation citol 2-[2-methy Rabbit	า ideline 404 า 1-3-(perfluoromethyl)anilino]nicotinate:
Specie Metho Result Specie Metho Result 1-deo Specie Result L-Mer	es od t yl alcohol: es t xy-1-(methylamino) - es t t nthol: es	- D-glu	OECD Test Gui No skin irritation Rabbit OECD Test Gui No skin irritation citol 2-[2-methy Rabbit Mild skin irritation Rabbit	n n 1 -3-(perfluoromethyl)anilino]nicotinate: on
Specie Metho Result Specie Metho Result 1-deo Specie Result L-Mer	es od t yl alcohol: es od t xy-1-(methylamino) - es t nthol: es od	- D-glu	OECD Test Gui No skin irritation Rabbit OECD Test Gui No skin irritation citol 2-[2-methy Rabbit Mild skin irritation Rabbit OECD Test Gui	n n 1 -3-(perfluoromethyl)anilino]nicotinate: on
Specie Metho Result Specie Metho Result 1-deo Specie Result L-Mer	es od t yl alcohol: es od t xy-1-(methylamino) - es t nthol: es od	- D-glu	OECD Test Gui No skin irritation Rabbit OECD Test Gui No skin irritation citol 2-[2-methy Rabbit Mild skin irritation Rabbit	n n 1 -3-(perfluoromethyl)anilino]nicotinate: on
Specie Metho Result Specie Metho Result 1-deo Specie Result L-Mer Specie Metho Result	es od t /I alcohol: es od t xy-1-(methylamino) - es t nthol: es od t a n-2-ol:	- D-glu	OECD Test Gui No skin irritation Rabbit OECD Test Gui No skin irritation citol 2-[2-methy Rabbit Mild skin irritation Rabbit OECD Test Gui Skin irritation	n n 1 -3-(perfluoromethyl)anilino]nicotinate: on
Specie Metho Result Specie Metho Result 1-deo Specie Result L-Mer Specie Metho Result	es od t /I alcohol: es od t xy-1-(methylamino) - es t nthol: es od t t nthol: es	- D-glu	OECD Test Gui No skin irritation Rabbit OECD Test Gui No skin irritation citol 2-[2-methy Rabbit Mild skin irritation Rabbit OECD Test Gui	n ideline 404 n 1-3-(perfluoromethyl)anilino]nicotinate: on ideline 404





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	ponents:		
2-Py Spec Resu		: Rabbit : Irritation to	eyes, reversing within 7 days
Benz	yl alcohol:		
Spec Resu Meth	llt		eyes, reversing within 21 days Guideline 405
1-deo	oxy-1-(methylamino)	-D-glucitol 2-[2-me	ethyl-3-(perfluoromethyl)anilino]nicotinate:
Spec Resu		: Rabbit : Irreversible	effects on the eye
L-Me	enthol:		
Spec Resu Meth	lt		eyes, reversing within 7 days Guideline 405
Prop	an-2-ol:		
Spec Resu		: Rabbit : Irritation to	eyes, reversing within 21 days
Resp	piratory or skin sensi	tization	
	sensitization	ailable information.	
-	biratory sensitization classified based on ava	ailable information.	
<u>Com</u>	ponents:		
Test	es of exposure ies od It	: Skin contac : Mouse : OECD Test : negative	n node assay (LLNA) t Guideline 429 ata from similar materials
Test	es of exposure ies od	: Maximizatio : Skin contac : Guinea pig : OECD Test : negative	

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1-deo	xy-1-(methylamino)	-D-glu	citol 2-[2-methyl-	3-(perfluoromethyl)anilino]nicotinate:			
Test 1 Route Specie	Type s of exposure es ssment		Maximization Test Dermal Guinea pig Does not cause skin sensitization. negative				
L-Mer	nthol:						
Test T Route Specie Metho Resul	es of exposure es od		Local lymph node Skin contact Mouse OECD Test Guid negative				
	an-2-ol:						
Test 1 Route Specie Metho Resul	s of exposure es od		Buehler Test Skin contact Guinea pig OECD Test Guid negative	eline 406			
Not cl	cell mutagenicity assified based on ava conents:	ailable	information.				
	rolidone:						
	toxicity in vitro	:	Test Type: Bacte Result: negative	rial reverse mutation assay (AMES)			
			Method: OECD T Result: negative	o mammalian cell gene mutation test est Guideline 476 on data from similar materials			
				nosome aberration test in vitro est Guideline 473			
Geno	toxicity in vivo	:	cytogenetic assay Species: Mouse Application Route	nalian erythrocyte micronucleus test (in vivo y) e: Intraperitoneal injection fest Guideline 474			
Benzy	yl alcohol:						
	toxicity in vitro	:	Test Type: Bacte Result: negative	rial reverse mutation assay (AMES)			
Genot	toxicity in vivo	:	Test Type: Mamr	nalian erythrocyte micronucleus test (in vivo			





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		Result: neg	ouse Route: Intraperitoneal injection ative
	toxicity in vitro		ethyl-3-(perfluoromethyl)anilino]nicotinate: Bacterial reverse mutation assay (AMES)
		Result: neg	ative
		Test Type: Test system Result: pos	n: mouse lymphoma cells
			Chromosomal aberration n: Chinese hamster ovary cells itive
		Test Type: Test system Result: pos	n: Escherichia coli
Geno	toxicity in vivo	: Test Type: Species: Me Application Result: neg	Route: Oral
	cell mutagenicity - ssment	: Weight of e cell mutage	vidence does not support classification as a germ n.
L-Mei	nthol:		
Geno	toxicity in vitro	Result: neg	Chromosome aberration test in vitro ative ased on data from similar materials
Geno	toxicity in vivo	cytogenetic Species: Mo	ouse
		Method: OE Result: neg	Route: Intraperitoneal injection CD Test Guideline 474 ative ased on data from similar materials
II			
	an-2-ol:		Postorial reverse mutation access (AMEO)
Geno	toxicity in vitro	: Test Type: Result: neg	Bacterial reverse mutation assay (AMES) ative
		Test Type: Result: neg	In vitro mammalian cell gene mutation test ative
Geno	toxicity in vivo	: Test Type: cytogenetic Species: Me	

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		Application Ro Result: negativ	te: Intraperitoneal injection		
Carc	inogenicity				
Not c	classified based on av	ailable information.			
Com	ponents:				
2-Pyi	rrolidone:				
Spec		: Mouse			
	ication Route	: Ingestion			
	sure time	: 18 month(s)			
Resu Rema		: negative : Based on data	from similar materials		
Benz	zyl alcohol:				
Spec	-	: Mouse			
	ication Route	: Ingestion			
Expo	sure time	: 103 weeks			
Meth		: OECD Test Gu	uideline 451		
Resu	ılt	: negative			
1-deo	oxy-1-(methylamino)	-D-glucitol 2-[2-methy	yl-3-(perfluoromethyl)anilino]nicotinate:		
Spec	cies	: Rat			
Appli	ication Route	: oral (feed)			
	osure time	: 104 w			
LOAE		: 2 mg/kg body v	veight		
Resu		: negative			
	et Organs	: Gastrointestina			
Rema	arks	: Significant toxi	city observed in testing		
Spec		: Mouse			
	ication Route	: oral (feed)			
	sure time	: 97 w			
NOA		: 0.6 mg/kg body	/ weight		
Resu		: negative	1 for all		
Rema	et Organs arks	: Gastrointestina : Significant toxi	city observed in testing		
••					
	enthol:				
Spec		: Mouse			
	ication Route	: Ingestion			
	osure time	: 103 weeks	idolino 452		
Meth Resu		: OECD Test Gu : negative	lideline 453		
Rema			from similar materials		
Prop	an-2-ol:				
Spec		: Rat			
	ication Route	: inhalation (vap	or)		
	sure time	: 104 weeks			
		14 / 24	4		

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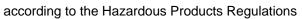


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Metho Resu		:	OECD Test Guid negative	deline 451
May o	oductive toxicity damage fertility. May dar	mag	e the unborn child	d.
	ponents:			
	rolidone: ts on fertility	:	Species: Rat Application Rout Result: positive	generation reproduction toxicity study te: Ingestion d on data from similar materials
Effect	ts on fetal development	:	Test Type: Emb Species: Rat Application Rout Result: positive	ryo-fetal development te: Ingestion
Repro sessr	oductive toxicity - As- nent	:	fertility, based or	of adverse effects on sexual function and n animal experiments., Clear evidence of on development, based on animal
II Benz	yl alcohol:			
	ts on fertility	:	Species: Rat Application Rout Result: negative	
Effect	ts on fetal development	:	Test Type: Emb Species: Mouse Application Rout Result: negative	te: Ingestion
II 1-dec	xy-1-(methylamino)-D	-alu	cital 2-[2-methyl	-3-(perfluoromethyl)anilino]nicotinate:
	ts on fertility		Test Type: Two- Species: Rat Application Rout General Toxicity Symptoms: No f	generation reproduction toxicity study te: Oral Parent: LOAEL: 1 - 1.5 mg/kg body weight etal abnormalities. ts on fertility and early embryonic
Effect	ts on fetal development	:	Embryo-fetal tox	
			15 / 24	



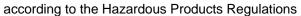
according to the Hazardous Products Regulations

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			offspring were de	tected only at high maternally toxic doses
			Species: Rabbit Application Route General Toxicity I Embryo-fetal toxic Result: Embryoto	vo-fetal development e: Oral Maternal: LOAEL: 3 mg/kg body weight city.: NOAEL: 3 mg/kg body weight xic effects and adverse effects on the tected only at high maternally toxic doses
L-Me	enthol:			
Effec	ets on fetal development	:	Test Type: Embry Species: Rat Application Route Result: negative	vo-fetal development e: Ingestion
II Prop	oan-2-ol:			
	cts on fertility	:	Test Type: Two-g Species: Rat Application Route Result: negative	eneration reproduction toxicity study
Effec	ets on fetal development	:	Test Type: Embry Species: Rat Application Route Result: negative	vo-fetal development : Ingestion
	T-single exposure classified based on availa	ble	information.	
<u>Com</u>	ponents:			
		glu		3-(perfluoromethyl)anilino]nicotinate:
Asse	essment	:	May cause respire	atory irritation.
Prop	an-2-ol:			
Asse	essment	:	May cause drows	iness or dizziness.
Caus	T-repeated exposure ses damage to organs (G sure.	astr	ointestinal tract, Ki	dney, Blood) through prolonged or repeated
Com	ponents:			
		alu	citol 2-[2-methyl-;	3-(perfluoromethyl)anilino]nicotinate:
1-de	oxy-1-(methylamino)-D·	giu		





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Repe	ated dose toxicity		
-	oonents:		
2-Pvr	rolidone:		
Speci NOAE Applic	es EL cation Route sure time	: Rat : 207 mg/kg : Ingestion : 3 Months : OECD Test Gu	ideline 408
Benzy	yl alcohol:		
Speci NOAE Applic	es EL cation Route sure time	: Rat : 1.072 mg/l : inhalation (dus : 28 Days : OECD Test Gu	
1-deo	xy-1-(methylamino)-D	-glucitol 2-[2-methy	/l-3-(perfluoromethyl)anilino]nicotinate:
Expos Targe Specie NOAE Applic Expos Targe	EL EL cation Route sure time t Organs EL cation Route sure time t Organs	 Rat 2 mg/kg < 4 mg/kg Oral 6 w Gastrointestina Rat 1 mg/kg Oral 1 y Gastrointestina 	
Expos	es EL cation Route sure time t Organs	: Monkey : 15 mg/kg : Oral : 90 d : Gastrointestina	ıl tract, Blood
	L cation Route sure time	: Rabbit : 80 mg/kg : Dermal : 21 d : Severe irritation	n
Expos	L cation Route sure time t Organs	: Dog : 11 mg/kg : Oral : 9 d : Gastrointestina : Vomiting	Il tract





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L-Mer	nthol:				
Specie NOAE Applic Expos Metho Rema	EL cation Route sure time od		Mouse 1,250 mg/kg Ingestion 91 Days OECD Test Guid Based on data fre	eline 408 om similar materials	
Propa	an-2-ol:				
Specie NOAE Applic Expos	es EL cation Route sure time	:	Rat 12.5 mg/l inhalation (vapor 104 Weeks)	
	ation toxicity assified based on ava	ailable	information.		
Experience with human exposure					

Components:

1-deoxy-1-(methylamino)-D-glucitol 2-[2-methyl-3-(perfluoromethyl)anilino]nicotinate:

Inhalation	: Symptoms: respiratory tract irritation
Skin contact	: Symptoms: Skin irritation
Eye contact	: Symptoms: Severe irritation
Ingestion	: Symptoms: Gastrointestinal disturbance, bleeding, hyperten- sion, Kidney disorders

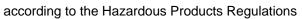
SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

2-Pyrrolidone:

Toxicity to fish	:	LC50 (Danio rerio (zebra fish)): > 4,600 - 10,000 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 500 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	ErC50 (Desmodesmus subspicatus (green algae)): > 500 mg/l Exposure time: 72 h
		EC10 (Desmodesmus subspicatus (green algae)): 22.2 mg/l Exposure time: 72 h
Toxicity to microorganisms	:	EC50: > 1,000 mg/l Exposure time: 30 min Method: OECD Test Guideline 209





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Benzy	/l alcohol:			
Toxici	ty to fish	:	LC50 (Pimephale Exposure time: 96	s promelas (fathead minnow)): 460 mg/l 5 h
	ty to daphnia and other ic invertebrates	:	EC50 (Daphnia m Exposure time: 48 Method: OECD T	
Toxici plants	ty to algae/aquatic	:	EC50 (Pseudokiro mg/l Exposure time: 72 Method: OECD T	
			NOEC (Pseudoki mg/l Exposure time: 72 Method: OECD T	
	ty to daphnia and other ic invertebrates (Chron- city)	:	NOEC (Daphnia r Exposure time: 2 ⁻ Method: OECD T	
1-deo	xy-1-(methylamino)-D-	glu	citol 2-[2-methyl-3	3-(perfluoromethyl)anilino]nicotinate:
Toxici	ty to fish	:	LC50 (Lepomis m Exposure time: 96 Method: FDA 4.1	
			LC50 (Oncorhyno Exposure time: 96 Method: FDA 4.1	
	ty to daphnia and other ic invertebrates	:	EC50 (Daphnia m Exposure time: 48 Method: FDA 4.08	
Toxici plants	ty to algae/aquatic	:	NOEC (Microcyst Exposure time: 13 Method: FDA 4.0	
			NOEC (Selenastr Exposure time: 12	um capricornutum (green algae)): 96 mg/l 2 d
L-Mer	nthol:			
Toxici	ty to fish	:	Exposure time: 96	o (zebra fish)): 15.6 mg/l 5 h 67/548/EEC, Annex V, C.1.
	ty to daphnia and other ic invertebrates	:	Exposure time: 48	nagna (Water flea)): 26.6 mg/l 3 h 67/548/EEC, Annex V, C.2.
Toxici	ty to algae/aquatic	:	EC50 (Desmodes	mus subspicatus (green algae)): 21.4 mg/l



according to the Hazardous Products Regulations

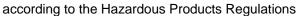
ersion .0	Revision Date: 07/06/2024		9S Number: 4147-00021	Date of last issue: 04/06/2024 Date of first issue: 10/28/2016
plants			Exposure time: 72 Method: Directive	? h 67/548/EEC, Annex V, C.3.
			Exposure time: 72	smus subspicatus (green algae)): 9.65 mg/l ? h 67/548/EEC, Annex V, C.3.
Toxicity	to microorganisms	:	EC50: 237 mg/l Exposure time: 96 Test Type: Respir Method: OECD Te	ation inhibition of activated sludge
Propan	n-2-ol:			
Toxicity		:	LC50 (Pimephales Exposure time: 96	s promelas (fathead minnow)): 9,640 mg/l 5 h
	to daphnia and other invertebrates	:	EC50 (Daphnia m Exposure time: 24	agna (Water flea)): > 10,000 mg/l ⊧ h
Toxicity	to microorganisms	:	EC50 (Pseudomo Exposure time: 16	nas putida): > 1,050 mg/l 5 h
II Persist	ence and degradabili	ity		
<u>Compo</u>	onents:			
2-Pyrro	olidone:			
Biodegi	radability	:	Result: Readily bio Remarks: Based o	odegradable. on data from similar materials
Benzyl	alcohol:			
	radability	:	Result: Readily bid Biodegradation: 9 Exposure time: 14	92 - 96 %
	v-1-(methylamino)-D-	alu	citol 2-[2-methyl-3	-(perfluoromethyl)anilino]nicotinate:
	/ in water	:	Hydrolysis: 0 %(2	
L-Ment	hol:			
	radability	:	Result: Readily bio Biodegradation: 6 Exposure time: 28 Method: OECD Te	64 %
Propan	1-2-ol:			
	radability	:	Result: rapidly deg	gradable
BOD/C	OD	:	BOD: 1,19 (BOD5 COD: 2,23 BOD/COD: 53 %)

according to the Hazardous Products Regulations



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II				
Bioacc	umulative potential			
Compo	onents:			
-	olidone:			
Partition octanol	n coefficient: n- /water	:	log Pow: -0.71 Method: OECD	Test Guideline 107
Benzyl	alcohol:			
Partition octanol	n coefficient: n- /water	:	log Pow: 1.05	
)-gl u		/I-3-(perfluoromethyl)anilino]nicotinate
Partition octanol	n coefficient: n- /water	:	log Pow: 1.34	
L-Ment	hol:			
Bioaccu	umulation	:	Bioconcentration Exposure time: Method: OECD	nus carpio (Carp) on factor (BCF): 0.5 - 15 6 Weeks 9 Test Guideline 305 ed on data from similar materials
Partition octanol	n coefficient: n- /water	:	log Pow: 3.15	
Propar	n-2-ol:			
Partition octanol	n coefficient: n- /water	:	log Pow: 0.05	
Mobilit	y in soil			
Compo	onents:			
1-deox	y-1-(methylamino)-[D-glu	citol 2-[2-methy	/I-3-(perfluoromethyl)anilino]nicotinate
	tion among environ- compartments	:	log Koc: 1.92	
	adverse effects a available			
SECTION 1	3. DISPOSAL CONS	IDEF	RATIONS	
Dispos	al methods			

•		
Waste from residues	:	Do not dispose of waste into sewer.
		Dispose of in accordance with local regulations.
Contaminated packaging	:	Empty containers should be taken to an approved waste
		handling site for recycling or disposal.
		Empty containers retain residue and can be dangerous.
		Do not pressurize, cut, weld, braze, solder, drill, grind, or
		expose such containers to heat, flame, sparks, or other
		sources of ignition. They may explode and cause injury and/or
		death.





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If not otherwise specified: Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

International Regulations

_

UNRTDG UN number Proper shipping name	:	UN 1993 FLAMMABLE LIQUID, N.O.S.
Class Packing group Labels Environmentally hazardous	: : :	(Propan-2-ol) 3 III 3 no
IATA-DGR UN/ID No. Proper shipping name	:	UN 1993 Flammable liquid, n.o.s. (Propan-2-ol)
Class Packing group Labels Packing instruction (cargo aircraft) Packing instruction (passen-	: : : : : : : : : : : : : : : : : : : :	3 III Flammable Liquids 366 355
ger aircraft)		
UN number Proper shipping name	:	UN 1993 FLAMMABLE LIQUID, N.O.S. (Propan-2-ol)
Class Packing group Labels EmS Code Marine pollutant		3 III 3 F-E, <u>S-E</u> no

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

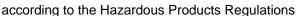
Not applicable for product as supplied.

Domestic regulation

TDG UN number Proper shipping name	:	UN 1993 FLAMMABLE LIQUID, N.O.S. (Propan-2-ol)
Class	:	3
Packing group	:	III
Labels	:	3
ERG Code	:	128
Marine pollutant	:	no

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





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Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

The ingredients of this product are reported in the following inventories:

AICS	:	not determined
DSL	:	not determined
IECSC	:	not determined

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

ACGIH ACGIH BEI CA AB OEL	:	USA. ACGIH Threshold Limit Values (TLV) ACGIH - Biological Exposure Indices (BEI) Canada. Alberta, Occupational Health and Safety Code (table
CA BC OEL		2: OEL) Canada. British Columbia OEL
CA QC OEL	÷	Québec. Regulation respecting occupational health and safe-
	-	ty, Schedule 1, Part 1: Permissible exposure values for air-
		borne contaminants
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
CA AB OEL / TWA	:	8-hour Occupational exposure limit
CA AB OEL / STEL	:	15-minute occupational exposure limit
CA BC OEL / TWA	:	8-hour time weighted average
CA BC OEL / STEL	:	short-term exposure limit
CA QC OEL / TWAEV	:	Time-weighted average exposure value
CA QC OEL / STEV	:	Short-term exposure value

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR -Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); 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; ERG - Emergency Response Guide; 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 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; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New



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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; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals 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; WHMIS - Workplace Hazardous Materials Information System

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 Agency, http://echa.europa.eu/
Revision Date Date format	:	07/06/2024 mm/dd/yyyy

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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