



Fluazuron / Citronellal Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 07/06/2024
3.1	09/28/2024	4624620-00014	Date of first issue: 07/09/2019

SECTION 1. IDENTIFICATION

Product name	:	Fluazuron / Citronellal 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 accordance with the Hazardous Products Regulations

Flammable liquids	:	Category 3
Skin irritation	:	Category 2
Eye irritation	:	Category 2A
Skin sensitization	:	Category 1
Reproductive toxicity	:	Category 1B
Specific target organ toxicity - single exposure	:	Category 3
GHS label elements Hazard pictograms	:	
Signal Word	:	Danger
Hazard Statements	:	H226 Flammable liquid and vapor. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H335 May cause respiratory irritation. H360D May damage the unborn child.
Precautionary Statements	:	Prevention:

according to the Hazardous Products Regulations



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		P202 Do not ha and understood P210 Keep awa and other ignitio P261 Avoid bre P264 Wash skii P271 Use only P272 Contamin the workplace.	ay from heat, hot surfaces, sparks, open flames on sources. No smoking. athing mist or vapors. In thoroughly after handling. outdoors or in a well-ventilated area. lated work clothing should not be allowed out o tective gloves, protective clothing, eye protectio
		all contaminate P304 + P340 + and keep comfo unwell. P305 + P351 + for several minu to do. Continue P308 + P313 IF P333 + P313 If tion. P337 + P313 If	P353 IF ON SKIN (or hair): Take off immediate d clothing. Rinse skin with water. P312 IF INHALED: Remove person to fresh ai ortable for breathing. Call a doctor if you feel P338 IF IN EYES: Rinse cautiously with water utes. Remove contact lenses, if present and ea rinsing. Exposed or concerned: Get medical attention. skin irritation or rash occurs: Get medical attent eye irritation persists: Get medical attention. ake off contaminated clothing and wash it befo
		Storage: P405 Store lock	ked up.
		Disposal:	of contents and container to an approved waste
	h azards s may form explosive	a mixture with air	

Substance / Mixture : Mixture

Components

Chemical name	Common Name/Synonym	CAS-No.	Concentration (% w/w)
N-Methyl-2-pyrrolidone	1- Methylpyrroli- dinone	872-50-4	>= 30 - < 60 *
Propan-2-ol	Isopropyl alco- hol	67-63-0	>= 5 - < 10 *
Butanone	Ethyl methyl ketone	78-93-3	>= 5 - < 10 *
6-Octenal, 3,7-	Citronellal	106-23-0	>= 1 - < 5 *



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dimet	hyl-	1				
Fluaz	uron	No data availa- ble	86811-58-	7	>= 1 - < 5 *	
* Actu	al concentration o	or concentration ra	ange is with	held a	as a trade secret	

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 advice.
If inhaled	:	If inhaled, remove to fresh air.
		Get medical attention.
In case of skin contact	:	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
		Get medical attention.
		Wash clothing before reuse.
In some of our contact		Thoroughly clean shoes before reuse.
In case of eye contact	:	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.
		Get medical attention.
If swallowed	:	If swallowed, DO NOT induce vomiting.
		Get medical attention.
.		Rinse mouth thoroughly with water.
Most important symptoms	:	Causes skin irritation.
and effects, both acute and		May cause an allergic skin reaction.
delayed		Causes serious eye irritation.
		May cause respiratory irritation.
Protection of first-aiders	:	May damage the unborn child. First Aid responders should pay attention to self-protection,
	•	and use the recommended personal protective equipment
Notos to physician		when the potential for exposure exists (see section 8).
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. Flash back possible over considerable distance. Vapors may form explosive mixtures with air. Exposure to combustion products may be a hazard to health.
Hazardous combustion prod-	:	Carbon oxides



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ucts			Nitrogen oxides (1 Chlorine compour Fluorine compour	nds
Spec ods	cific extinguishing meth-	:	cumstances and t Use water spray t	measures that are appropriate to local cir- he surrounding environment. o cool unopened containers. ged containers from fire area if it is safe to do
	cial protective equipment re-fighters	:	In the event of fire Use personal prot	e, wear self-contained breathing apparatus. ective equipment.
SECTION	6. ACCIDENTAL RELE	AS	E MEASURES	
tive	onal precautions, protec- equipment and emer- cy procedures	:		
Envi	ronmental 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 se of contaminated wash water. should be advised if significant spillages
	nods and materials for ainment and cleaning up	:	Suppress (knock of jet. For large spills, pr containment to ke can be pumped, s container. Clean up remainir absorbent. Local or national r disposal of this ma employed in the c determine which r Sections 13 and 1	s should be used. t absorbent material. down) gases/vapors/mists with a water spray rovide diking or other appropriate ep material from spreading. If diked material store recovered material in appropriate ng materials from spill with suitable regulations may apply to releases and aterial, as well as those materials and items leanup of releases. You will need to regulations 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	:	If sufficient ventilation is unavailable, use with local exhaust

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Advice on safe handling		ment. Do not get on Avoid breathin Do not swallo Do not get in Wash skin the Handle in acc practice, base assessment Non-sparking Keep containe Already sensi to asthma, all should consul respiratory irri Keep away fre other ignition Take precauti	
Conditions for safe storage		Store locked Keep tightly c Keep in a coo Store in acco	losed. I, well-ventilated place. dance with the particular national regulations.
Mater	rials to avoid	: Do not store v Strong oxidizi Self-reactive s Organic perox Flammable so Pyrophoric liq Pyrophoric so Self-heating s Substances a flammable ga Explosives Gases	substances and mixtures kides blids uids lids ubstances and mixtures nd mixtures which in contact with water emit

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parame- ters / Permissible concentration	Basis
N-Methyl-2-pyrrolidone	872-50-4	TŴA	400 mg/m ³	CA ON OEL
Propan-2-ol	67-63-0	STEL	400 ppm 984 mg/m ³	CA AB OEL
		TWA	200 ppm	CA AB OEL





according to the Hazardous Products Regulations

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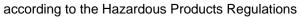
ersion 1	Revision Date: 09/28/2024	SDS Number: 4624620-00014		ast issue: 07/06/2024 rst issue: 07/09/2019	
1				492 mg/m ³	
-			TWA	200 ppm	CA BC OEL
			STEL	400 ppm	CA BC OEL
			TWAEV	200 ppm	CA QC OEL
			STEV	400 ppm	CA QC OEL
			TWA	200 ppm	ACGIH
			STEL	400 ppm	ACGIH
Butar	none	78-93-3	TWA	200 ppm 590 mg/m ³	CA AB OEL
			STEL	300 ppm 885 mg/m ³	CA AB OEL
			TWA	50 ppm	CA BC OEL
			STEL	100 ppm	CA BC OEL
			TWAEV	50 ppm 150 mg/m³	CA QC OEL
			STEV	100 ppm 300 mg/m ³	CA QC OEL
			TWA	75 ppm	ACGIH
			STEL	150 ppm	ACGIH
Fluaz	uron	86811-58-7	TWA	60 µg/m3 (OEB 3)	Internal
			Wipe limit	600 µg/ 100cm2	Internal

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sam- pling time	Permissible concentra- tion	Basis
N-Methyl-2-pyrrolidone	872-50-4	5-Hydroxy- N-methyl-2- pyrrolidone	Urine	End of shift (As soon as possible after exposure ceases)	100 mg/l	ACGIH BEI
Propan-2-ol	67-63-0	Acetone	Urine	End of shift at end of work- week	40 mg/l	ACGIH BEI
Butanone	78-93-3	methyl ethyl ketone	Urine	End of shift (As soon as possible after exposure ceases)	2 mg/l	ACGIH BEI

technologies to control airborne concentrations (e.g., dripless 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.





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		are required the compounce containment	at technologies suitable for controlling compounds I to control at source and to prevent migration of nd to uncontrolled areas (e.g., open-face t devices). en handling.
		Use explosio equipment.	on-proof electrical, ventilating and lighting
Perso	onal protective equip	ment	
Respi	iratory protection ter type protection	: If adequate exposure as	local exhaust ventilation is not available or seessment demonstrates exposures outside the ed guidelines, use respiratory protection. for Type
	aterial	: Chemical-re	esistant gloves
Re	emarks		ouble gloving. Take note that the product is which may impact the selection of hand
Eye p	protection	: Wear safety If the work e mists or aer Wear a face	glasses with side shields or goggles. environment or activity involves dusty conditions, osols, wear the appropriate goggles. eshield or other full face protection if there is a direct contact to the face with dusts, mists, or
Skin a	and body protection	: Work uniforr Additional b task being p disposable s	m or laboratory coat. ody garments should be used based upon the performed (e.g., sleevelets, apron, gauntlets, suits) to avoid exposed skin surfaces. riate degowning techniques to remove potentially ed clothing.
Hygie	ne measures	eye flushing working plac When using Contaminate workplace. Wash conta The effective engineering appropriate industrial hy	to chemical is likely during typical use, provide systems and safety showers close to the ce. do not eat, drink or smoke. ed work clothing should not be allowed out of the minated clothing before re-use. e operation of a facility should include review of controls, proper personal protective equipment, degowning and decontamination procedures, rgiene monitoring, medical surveillance and the nistrative controls.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Aqueous solution

- Color : yellow
- Odor : No data available

according to the Hazardous Products Regulations



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	Odor T	hreshold	:	No data available	
	рН		:	No data available	
	Melting	point/freezing point	:	-4 °C	
	Initial b range	oiling point and boiling	:	78 °C	
	Flash p	oint	:	52 °C	
	Evapor	ation rate	:	No data available	
	Flamma	ability (solid, gas)	:	Not applicable	
	Flamma	ability (liquids)	:	Not applicable	
		explosion limit / Upper bility limit	:	No data available	
		explosion limit / Lower bility limit	:	No data available	
	Vapor p	pressure	:	No data available	
	Relative	e vapor density	:	No data available	
	Relative	e density	:	0.94 - 0.96	
	Density	,	:	No data available	
	Solubili Wat	ty(ies) er solubility	:	practically insolut	ble
	Solu	ubility in other solvents	:	soluble Solvent: Ethanol	
	Partitio octanol	n coefficient: n- /water	:	log Pow: -0.54	
		nition temperature	:	No data available	
	Decom	position temperature	:	No data available	
	Viscosi Visc	ty cosity, kinematic	:	5.3 - 5.7 mm²/s (25 °C)
	Explosi	ve properties	:	Not explosive	
	Oxidizir	ng properties	:	The substance or	mixture is not classified as oxidizing.
	Molecu	lar weight	:	No data available	

according to the Hazardous Products Regulations



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	icle characteristics icle size	:	Not applicable	
SECTION	N 10. STABILITY AND RI	EAC	ΤΙVITY	
Chei	ctivity mical stability sibility of hazardous reac- s	:	Stable under n Flammable liqu Vapors may for	s a reactivity hazard. ormal conditions. id and vapor. m explosive mixture with air. strong oxidizing agents.
Inco	ditions to avoid mpatible materials ardous decomposition ucts	:	Heat, flames an Oxidizing agen No hazardous	•

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

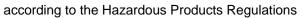
Inhalation	
Skin contact	
Ingestion	
Eye contact	

Acute toxicity

Not classified based on available information.

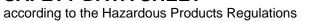
Product:

Floudel.		
Acute oral toxicity	:	Acute toxicity estimate: > 2,000 mg/kg Method: Calculation method
Acute dermal toxicity	:	Acute toxicity estimate: > 2,000 mg/kg Method: Calculation method
Components:		
N-Methyl-2-pyrrolidone:		
Acute oral toxicity	:	LD50 (Rat): 4,150 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): > 5.1 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403
Acute dermal toxicity	:	LD50 (Rat): > 5,000 mg/kg
Propan-2-ol:		
Acute oral toxicity	÷	LD50 (Rat): > 5,000 mg/kg
	•	LD50 (ital). > 5,000 ilig/kg
Acute inhalation toxicity	:	LC50 (Rat): > 25 mg/l Exposure time: 6 h Test atmosphere: vapor





/ersion 3.1	Revision Date: 09/28/2024	DS Number:Date of last issue: 0624620-00014Date of first issue: 0	
Acute	dermal toxicity	LD50 (Rabbit): > 5,000 mg/kg	
Butar			
Acute	oral toxicity	LD50 (Rat): > 2,000 - 5,000 mg/kg Remarks: Based on data from similar	materials
Acute	inhalation toxicity	LC50 (Rat): > 25.5 mg/l Exposure time: 4 h Test atmosphere: vapor Method: OECD Test Guideline 436 Remarks: Based on data from similar	materials
Acute	dermal toxicity	LD50 (Rabbit): > 5,000 mg/kg	
6-Oct	enal, 3,7-dimethyl-:		
Acute	oral toxicity	LD50 (Rat, female): 2,150 mg/kg	
Acute	dermal toxicity	LD50 (Rabbit): > 2,500 - 5,000 mg/kg	
Fluaz	uron:		
Acute	oral toxicity	LD50 (Rat): > 5,000 mg/kg Method: OECD Test Guideline 401	
Acute	inhalation toxicity	LC50 (Rat): > 6.0 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403	
Acute	dermal toxicity	LD50 (Rat): > 2,000 mg/kg Method: OECD Test Guideline 402	
-	corrosion/irritation es skin irritation.		
<u>Comp</u>	oonents:		
N-Met	thyl-2-pyrrolidone:		
Resul		Skin irritation	
Propa	an-2-ol:		
Speci		Rabbit	
Resul	t	No skin irritation	
Butar	none:		
Asses	ssment	Repeated exposure may cause skin d	ryness or cracking.
Speci		Rabbit	
Metho		OECD Test Guideline 404	
Resul	ι	No skin irritation	





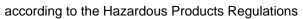
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ersion 1	Revision Date: 09/28/2024		DS Number: 24620-00014	Date of last issue: 07/06/2024 Date of first issue: 07/09/2019
Rema	arks	:	Based on data fi	rom similar materials
6-Oct	tenal, 3,7-dimethyl-:			
Speci	ies	:	Rabbit	
Resu	lt	:	Skin irritation	
Fluaz	uron:			
Speci		:	Rabbit	
Metho		÷	OECD Test Guid	
Resu	IL	:	No skin irritation	
	ous eye damage/eye irr		ion	
Caus	es serious eye irritation.			
<u>Com</u>	ponents:			
N-Me	thyl-2-pyrrolidone:			
Speci		:	Rabbit	
Resu	lt	:	Irritation to eyes	, reversing within 21 days
Propa	an-2-ol:			
Speci		:	Rabbit	
Resu	lt	:	Irritation to eyes	, reversing within 21 days
Buta	none:			
Speci		:	Rabbit	
Resu		:		, reversing within 21 days
Metho	bd	:	OECD Test Guid	deline 405
6-Oct	tenal, 3,7-dimethyl-:			
Speci		:	Rabbit	
Resu	lt	:	Irritation to eyes	, reversing within 21 days
Fluaz	uron:			
Speci		:	Rabbit	
Resu		:	Mild eye irritation	
Metho	bC	:	OECD Test Guid	deline 405
Resp	iratory or skin sensitiz	zatio	on	
-	-			
Skin	sensitization			

May cause an allergic skin reaction.

Respiratory sensitization

Not classified based on available information.



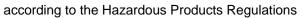


sion	Revision Date: 09/28/2024	SDS Number:Date of last issue: 07/06/20244624620-00014Date of first issue: 07/09/2019	
<u>Com</u>	oonents:		
Test 7	es of exposure les od lt	 Local lymph node assay (LLNA) Skin contact Mouse OECD Test Guideline 429 negative Based on data from similar materials 	
Test 7	es of exposure les od	 Buehler Test Skin contact Guinea pig OECD Test Guideline 406 negative 	
Butar Test T Route Speci Metho Resul	Type es of exposure les od	 Buehler Test Skin contact Guinea pig OECD Test Guideline 406 negative 	
Test 7	es of exposure les	 Maximization Test Skin contact Guinea pig positive 	
Asses	ssment	: Probability or evidence of skin sensitization in hun	nans
		: Skin contact : Guinea pig : negative	
	cell mutagenicity lassified based on ava	ilable information.	
<u>Comp</u>	oonents:		
	thyl-2-pyrrolidone: toxicity in vitro	: Test Type: Bacterial reverse mutation assay (AME Method: OECD Test Guideline 471 Result: negative	ES)
		Test Type: In vitro mammalian cell gene mutation Method: OECD Test Guideline 476 Result: negative	test

according to the Hazardous Products Regulations

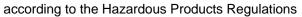


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				damage and repair, unscheduled DNA syn- lian cells (in vitro)				
Genotoxicity in vivo			Test Type: Mammalian erythrocyte micronucleus test (in cytogenetic assay) Species: Mouse Application Route: Ingestion Method: OECD Test Guideline 474 Result: negative					
			cytogenetic test, Species: Hamste Application Route					
Pro	oan-2-ol:							
Gen	otoxicity in vitro	:	Test Type: Bacte Result: negative	rial reverse mutation assay (AMES)				
			Test Type: In vitre Result: negative	o mammalian cell gene mutation test				
Gen	otoxicity in vivo	:	cytogenetic assa Species: Mouse	nalian erythrocyte micronucleus test (in vivo y) e: Intraperitoneal injection				
Buta	anone:							
Gen	otoxicity in vitro	:	Test Type: Bacte Result: negative	rial reverse mutation assay (AMES)				
			Test Type: In vitre Result: negative	o mammalian cell gene mutation test				
			Test Type: Chron Result: negative	nosome aberration test in vitro				
				damage and repair, unscheduled DNA syn- lian cells (in vitro)				
			Test Type: Sacch (in vitro) Result: negative	aromyces cerevisiae, gene mutation assay				
Gen	otoxicity in vivo	:	Test Type: Mamr cytogenetic assag	nalian erythrocyte micronucleus test (in vivo y)				



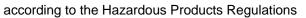


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				Species: Mouse Application Route Result: negative	: Intraperitoneal injection
	6-Octe	nal, 3,7-dimethyl-:			
		xicity in vitro	:	Test Type: Bacter Result: negative	ial reverse mutation assay (AMES)
				Test Type: In vitro Method: OECD To Result: negative	e mammalian cell gene mutation test est Guideline 476
				Test Type: in vitro Method: OECD To Result: negative	micronucleus test est Guideline 487
	Genoto	xicity in vivo	:	cytogenetic assay Species: Mouse Application Route Result: negative	, ,
	Fluazu	ron:			
	Genoto	xicity in vitro	:	Test Type: Bacter Result: negative	ial reverse mutation assay (AMES)
				Test Type: DNA F Result: negative	Repair
				Test Type: In vitro Result: negative	mammalian cell gene mutation test
	Genoto	xicity in vivo	:	Test Type: Cytoge Species: Hamster Result: equivocal	
	Carcin	ogenicity			
	Not clas	ssified based on availa	able	information.	
	Compo	onents:			
		yl-2-pyrrolidone:		Det	
	Species Applica Exposu Result	tion Route	:	Rat Ingestion 2 Years negative	
	Species Applica Exposu Result	tion Route	: :	Rat inhalation (vapor) 2 Years negative	



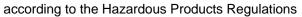


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Specie Applic	ation Route sure time od	:	Rat inhalation (vapor) 104 weeks OECD Test Guide negative	
Specie Applic Expos Result Rema Specie Applic	ation Route sure time t rks es ation Route sure time t		Mouse Ingestion 104 - 105 weeks negative	om similar materials om similar materials
Expos Metho Result Specio Applic	es ation Route sure time d t t es sation Route sure time		Rat Ingestion 2 Years OECD Test Guide negative Mouse Ingestion 2 Years negative	eline 453
May d <u>Comp</u> N-Met Effects	oductive toxicity amage the unborn child oonents: chyl-2-pyrrolidone: s on fertility s on fetal development	I. :	Species: Rat Application Route Method: OECD T Result: negative	est Guideline 416 vo-fetal development





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			Species: Rat	y/early embryonic development : inhalation (vapor)
			Test Type: Embry Species: Rabbit Application Route Result: positive	ro-fetal development : Ingestion
Repro- sessm	ductive toxicity - As- ent	:	Clear evidence of animal experiment	adverse effects on development, based on tts.
-	n-2-ol: s on fertility	:	Test Type: Two-g Species: Rat Application Route Result: negative	eneration reproduction toxicity study : Ingestion
Effects	s on fetal development	:	Test Type: Embry Species: Rat Application Route Result: negative	vo-fetal development : Ingestion
Butan	one:			
Effects	s on fertility	:	Species: Rat Application Route Result: negative	eneration reproduction toxicity study : Ingestion on data from similar materials
Effects	s on fetal development	:	Test Type: Embry Species: Rat Application Route Method: OECD To Result: negative	
6-Octe	enal, 3,7-dimethyl-:			
	s on fertility	:	Species: Rat Application Route Method: OECD To Result: negative	
Effects	s on fetal development	:	Species: Rat Application Route Method: OECD To Result: negative	



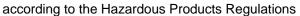


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Fluazu	iron:			
	on fertility	:	Test Type: Two-g Species: Rat Application Route Result: negative	eneration reproduction toxicity study
Effects	on fetal development	:	Test Type: Embry Species: Rat Application Route Result: negative	ro-fetal development
			Test Type: Embry Species: Rabbit Application Route Method: OECD To Result: negative	
STOT-	single exposure			
May ca	use respiratory irritatio	n.		
Compo	onents:			
N-Meth	nyl-2-pyrrolidone:			
Assess	sment	:	May cause respire	atory irritation.
Propar	n-2-ol:			
Assess	sment	:	May cause drows	iness or dizziness.
Butano	one:			
Assess	sment	:	May cause drows	iness or dizziness.
	repeated exposure ssified based on availa	able	information.	
Repea	ted dose toxicity			
Compo	onents:			
N-Meth	nyl-2-pyrrolidone:			
	- ation Route ure time	:	Rat, male 169 mg/kg 433 mg/kg Ingestion 90 Days OECD Test Guide	eline 408
	- ation Route ure time	:	Rat 0.5 mg/l 1 mg/l inhalation (dust/m 96 Days OECD Test Guide	

according to the Hazardous Products Regulations



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NC LO Apj	ecies DAEL AEL plication Route posure time	: Rabbit : 826 mg/kg : 1,653 mg/kg : Skin contact : 20 Days	
Sp NC Ap	opan-2-ol: ecies DAEL plication Route posure time	: Rat : 12.5 mg/l : inhalation (vapor : 104 Weeks)
Sp NC Ap Ex	tanone: ecies DAEL plication Route posure time thod	: Rat : 14.84 mg/l : inhalation (vapor : 90 Days : OECD Test Guid	
Sp LO Ap Ex	Octenal, 3,7-dimethyl-: ecies AEL plication Route posure time marks	: Rat : > 100 mg/kg : Ingestion : 14 Weeks : Based on data fre	om similar materials
Sp LO Ap Ex Ta NC LO Ap	azuron: ecies AEL plication Route cosure time rget Organs ecies DAEL AEL plication Route	 Rat 240 mg/kg Ingestion 13 Weeks Liver, Thyroid, Pi Rat 10 mg/kg Skin contact 2 Weeka 	tuitary gland
Sp NC LO Ap Ex	oosure time ecies DAEL AEL plication Route posure time rget Organs	: 3 Weeks : Dog : 7.5 mg/kg : 110 mg/kg : Ingestion : 52 Weeks : Liver	





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Aspiration toxicity

Not classified based on available information.

Components:

Butanone:

The substance or mixture causes concern owing to the assumption that it causes a human aspiration toxicity hazard.

Experience with human exposure

Components:

N-Methyl-2-pyrrolidone:

Skin contact : Symptoms: Skin irritation

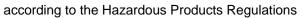
SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

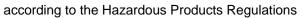
N-Methyl-2-pyrrolidone:	
Toyioity to figh	

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 500 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 1,000 mg/l Exposure time: 24 h Method: DIN 38412
Toxicity to algae/aquatic plants	:	ErC50 (Desmodesmus subspicatus (green algae)): 600.5 mg/l Exposure time: 72 h
		EC10 (Desmodesmus subspicatus (green algae)): 92.6 mg/l Exposure time: 72 h
Toxicity to daphnia and other aquatic invertebrates (Chron- ic toxicity)	:	NOEC (Daphnia magna (Water flea)): 12.5 mg/l Exposure time: 21 d Method: OECD Test Guideline 211
Toxicity to microorganisms	:	EC50: > 600 mg/l Exposure time: 30 min Method: ISO 8192
Propan-2-ol:		
Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 9,640 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 10,000 mg/l Exposure time: 24 h
Toxicity to microorganisms	:	EC50 (Pseudomonas putida): > 1,050 mg/l Exposure time: 16 h





Versic 3.1	on	Revision Date: 09/28/2024		0S Number: 24620-00014	Date of last issue: 07/06/2024 Date of first issue: 07/09/2019
	Butano oxicity	ne: to fish	:	LC50 (Pimephale: Exposure time: 96 Method: OECD To	
		to daphnia and other invertebrates	:	EC50 (Daphnia m Exposure time: 48 Method: OECD Te	
	Toxicity to algae/aquatic plants		:	ErC50 (Pseudokir mg/l Exposure time: 96 Method: OECD Te	
				NOEC (Pseudokir mg/l Exposure time: 96 Method: OECD To	
		n al, 3,7-dimethyl-: to fish	:	LC50 (Leuciscus Exposure time: 96 Method: DIN 3842	
		to daphnia and other invertebrates	:	Exposure time: 48	agna (Water flea)): 8.7 mg/l 3 h 67/548/EEC, Annex V, C.2.
	oxicity	to algae/aquatic	:	ErC50 (Desmode: Exposure time: 72	smus subspicatus (green algae)): 13.33 mg/l 2 h
				EC10 (Desmodes Exposure time: 72	mus subspicatus (green algae)): 4.52 mg/l 2 h
Т	oxicity	to microorganisms	:	EC10 (Pseudomo Exposure time: 30	nas putida): 650 mg/l) min
F	luazu	on.			
		to fish	:	LC50 (Cyprinus ca Exposure time: 96	arpio (Carp)): > 9.1 mg/l ò h
		to daphnia and other invertebrates	:	EC50 (Daphnia s Exposure time: 48	o. (Water flea)): 0.0006 mg/l 3 h
	oxicity lants	to algae/aquatic	:	NOEC (Raphidocelis subcapitata (freshwater green alga)): 27.9 mg/l Exposure time: 72 h	





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Persi	istence and degrada	bility		
<u>Com</u>	ponents:			
	ethyl-2-pyrrolidone: egradability	:	Biodegradation: Exposure time: 2	73 %
Prop	an-2-ol:			
Biode	egradability	:	Result: rapidly d	legradable
BOD	/COD	:	BOD: 1,19 (BOE COD: 2,23 BOD/COD: 53 %	
Buta	none:			
	egradability	:	Result: Readily I Biodegradation: Exposure time: 2 Method: OECD	98 %
	tenal, 3,7-dimethyl-: egradability	:	Result: Readily I Biodegradation: Exposure time: 2 Method: OECD	83 %
Bioa	ccumulative potentia	al		
Com	ponents:			
N-Me	thyl-2-pyrrolidone:			
Partit	ion coefficient: n- nol/water	:	log Pow: -0.46 Method: OECD	Test Guideline 107
Partit	an-2-ol: ion coefficient: n- nol/water	:	log Pow: 0.05	
Buta	none:			
	ion coefficient: n- nol/water	:	log Pow: 0.3	
Partit	tenal, 3,7-dimethyl-: ion coefficient: n- nol/water	:	log Pow: 3.62	
	zuron: ion coefficient: n-	:	log Pow: 5.1	

according to the Hazardous Products Regulations



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octar	nol/water		
	lity in soil ata available		
	r adverse effects ata available		
SECTION	13. DISPOSAL CONS	DERATIONS	
Disp	osal methods		
Wast	e from residues	•	of waste into sewer. cordance with local regulations.
Conta	aminated packaging	: Empty containe handling site for Empty containe Do not pressuri:	rs should be taken to an approved waste recycling or disposal. rs retain residue and can be dangerous. ze, cut, weld, braze, solder, drill, grind, or ntainers to heat, flame, sparks, or other

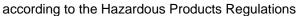
death. If not otherwise specified: Dispose of as unused product.

sources of ignition. They may explode and cause injury and/or

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG UN number Proper shipping name Class	UN 1993 FLAMMABLE LIQUID, N.O.S. (Propan-2-ol, Butanone) 3	
Packing group Labels Environmentally hazardous	III 3 no	
IATA-DGR UN/ID No. Proper shipping name	UN 1993 Flammable liquid, n.o.s. (Propan-2-ol, Butanone)	
Class Packing group Labels Packing instruction (cargo aircraft) Packing instruction (passen- ger aircraft)	3 III Flammable Liquids 366 355	
IMDG-Code UN number Proper shipping name Class Packing group Labels EmS Code	UN 1993 FLAMMABLE LIQUID, N.O.S. (Propan-2-ol, Butanone, Fluazuron, 2,6-Di-tert-butyl-p 3 III 3 F-E, <u>S-E</u>	-cresol)





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Marin	e pollutant	:	yes	
Trans	sport in bulk accordi	ng to	Annex II of MAR	POL 73/78 and the IBC Code
Not a	pplicable for product a	s sup	plied.	
Dome	estic regulation			
TDG				
UN n	umber	:	UN 1993	
Prope	er shipping name	:	FLAMMABLE LI (Propan-2-ol, Bu	,
Class	6	:		,
Packi	ing group	:	111	
Label	ls	:	3	
ERG	Code	:	128	
Marin	e pollutant	:	yes(Fluazuron, 2	2,6-Di-tert-butyl-p-cresol)
0				

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

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	:	USA. ACGIH Threshold Limit Values (TLV) ACGIH - Biological Exposure Indices (BEI)
CA AB OEL	:	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
CA BC OEL	:	Canada. British Columbia OEL
CA ON OEL	:	Ontario Table of Occupational Exposure Limits made under the Occupational Health and Safety Act.
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 ON OEL / TWA	:	Time-Weighted Average Limit (TWA)



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CA QC OEL / TWAEV CA QC OEL / STEV		Time-weighted average exposure value Short-term exposure value
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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 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 Agen- cy, http://echa.europa.eu/
Revision Date Date format	:	09/28/2024 mm/dd/yyyy

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.