

according to the Hazardous Products Regulations

# **Cypermethrin Formulation**

Version	Revision Date:	SDS Number:	Date of last issue: 03/02/2023
1.11	09/30/2023	6116888-00012	Date of first issue: 07/15/2020

### **SECTION 1. IDENTIFICATION**

Product name	:	Cypermethrin 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 Reproductive toxicity : Category 2						
Specific target organ toxicity - single exposure	:	Category 2 (Nervous system)				
GHS label elements Hazard pictograms	:					
Signal Word	:	Warning				
Hazard Statements	:	H361f Suspected of damaging fertility. H371 May cause damage to organs (Nervous system).				
Precautionary Statements	:	<ul> <li>Prevention:</li> <li>P201 Obtain special instructions before use.</li> <li>P202 Do not handle until all safety precautions have been read and understood.</li> <li>P260 Do not breathe mist or vapors.</li> <li>P264 Wash skin thoroughly after handling.</li> <li>P270 Do not eat, drink or smoke when using this product.</li> <li>P280 Wear protective gloves, protective clothing, eye protection and face protection.</li> </ul>				
		Response:				

P308 + P311 IF exposed or concerned: Call a doctor.

#### Storage:



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P405 Store locked up.

Disposal:

P501 Dispose of contents and container to an approved waste disposal plant.

### Other hazards

None known.

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

Substance / Mixture : Mixture

Components

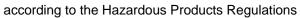
	Common Name/Synonym	CAS-No.	Concentration (% w/w)
Cypermethrin	No data availa- ble	52315-07-8	5

#### **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 soap and plenty of water. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.
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. Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person.
Most important symptoms and effects, both acute and delayed	:	Suspected of damaging fertility. May cause damage to organs.
Protection of first-aiders	:	First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment 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)





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	able extinguishing	:	Dry chemical None known.		
	media Specific hazards during fire		Exposure to combustion products may be a hazard to health.		
	Hazardous combustion prod-		Carbon oxides Nitrogen oxides (N	NOx)	
Specifi ods	c extinguishing meth-	:	: Use extinguishing measures that are appropriate to local cumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe so. Evacuate area.		
	l protective equipment fighters	:		e, wear self-contained breathing apparatus. ective equipment.	
SECTION 6	. ACCIDENTAL RELE	ASI	EMEASURES		
tive eq	al precautions, protec- uipment and emer- procedures	:		ective equipment. ing advice (see section 7) and personal ent recommendations (see section 8).	
Enviro	nmental precautions	Prevent further leakage or spi Prevent spreading over a wide oil barriers). Retain and dispose of contam		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	
	ds and materials for ament and cleaning up	:	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	a absorbent material. Tovide diking or other appropriate ep material from spreading. If diked material tore recovered material in appropriate ing 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 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	: Do not breathe mist or vapors.
	Do not swallow.
	Avoid contact with eyes.



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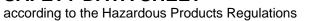
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		Avoid prolonged or repeated contact with skin. Wash skin thoroughly after handling. Handle in accordance with good industrial hygiene and safet practice, based on the results of the workplace exposure assessment Do not eat, drink or smoke when using this product. Take care to prevent spills, waste and minimize release to th environment.				
Conditions for safe storage		Store locked up	: Keep in properly labeled containers. Store locked up.			
Materials to avoid		<ul> <li>Store in accordance with the particular national regulations.</li> <li>Do not store with the following product types: Strong oxidizing agents Gases</li> </ul>				

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components	CAS-No.	Value type (Form of exposure)	Control parame- ters / Permissible concentration	Basis
Cypermethrin	52315-07-8	TWA	50 µg/m3 (OEB 3)	Internal
Cypermeanin		ation: DSEN, Sk		Internal
		Wipe limit	100 µg/100 cm2	Internal
Engineering measures	technologies less quick co All engineerir design and o protect produ	to control airborr nnections). ng controls should perated in accord cts, workers, and	controls and manufac ne concentrations (e.g d be implemented by dance with GMP princ d the environment. require special contai	g., drip- facility ciples to
Personal protective equipme	nt			
Respiratory protection Filter type	exposure ass recommende	essment demon	tilation is not available strates exposures ou e respiratory protectio ganic vapor type	tside the
Hand protection Material	: Chemical-res	istant gloves		
Eye protection Skin and body protection Hygiene measures	If the work er mists or aero Wear a faces potential for o aerosols. : Work uniform : If exposure to	vironment or act sols, wear the ap hield or other full lirect contact to t or laboratory co chemical is like systems and safe	shields or goggles. ivity involves dusty co propriate goggles. I face protection if the he face with dusts, m at. ly during typical use, ety showers close to t	re is a ists, or provide
	• • •	do not eat, drink o	or smoke.	

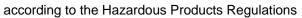
### Ingredients with workplace control parameters





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			The effective open engineering contro appropriate degov	ed clothing before re-use. ration of a facility should include review of ols, proper personal protective equipment, vning and decontamination procedures, monitoring, medical surveillance and the ive controls.
SECTIO	N 9. PHYSICAL AND CH	ΞΜΙΟ	CAL PROPERTIES	8
App	bearance	:	liquid	
Col	or	:	yellow	
Od	or	:	characteristic	
Od	or Threshold	:	No data available	)
рH		:	No data available	
Me	Iting point/freezing point	:	-30 °C	
Initi ran	al boiling point and boiling ge	:	210 °C	
Fla	sh point	:	208 °C	
Eva	aporation rate	:	No data available	
Fla	mmability (solid, gas)	:	Not applicable	
Fla	mmability (liquids)	:	Not applicable	
	per explosion limit / Upper nmability limit	:	No data available	
	ver explosion limit / Lower nmability limit	:	No data available	)
Vap	por pressure	:	No data available	)
Rel	ative vapor density	:	No data available	9
Rel	ative density	:	0.92 - 0.94	
Dei	nsity	:	No data available	)
	ubility(ies) Water solubility	:	insoluble	
	tition coefficient: n-	:	Not applicable	
	anol/water oignition temperature	:	No data available	





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Decon	nposition temperature	:	No data available	e
	sity cosity, kinematic sive properties	:	No data available Not explosive	9
	ing properties ular weight	:	The substance o	r mixture is not classified as oxidizing.
Particl	e size	:	Not applicable	

### SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Not classified as a reactivity hazard.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reac-	:	Can react with strong oxidizing agents.
tions		
Conditions to avoid	:	None known.
Incompatible materials	:	Oxidizing agents
Hazardous decomposition	:	No hazardous decomposition products are known.
products		

### **SECTION 11. TOXICOLOGICAL INFORMATION**

### Information on likely routes of exposure

Inhalation Skin contact Ingestion Eye contact

#### Acute toxicity

Not classified based on av	/ailable	information.
Product:		
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
<u>Components:</u>		
Cypermethrin:		
Acute oral toxicity	:	LD50 (Rat, female): 367 mg/kg
		LD50 (Rat, male): 891 mg/kg
Acute dermal toxicity	:	LD50 (Rat): > 4,800 mg/kg



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### LD50 (Rabbit): > 2,400 mg/kg

#### Skin corrosion/irritation

Not classified based on available information.

#### Components:

#### Cypermethrin:

Species	:	Rabbit
Method	:	Draize Test
Result	:	No skin irritation

### Serious eye damage/eye irritation

Not classified based on available information.

#### **Components:**

#### Cypermethrin:

Species	:	Rabbit
Result	:	No eye irritation
Method	:	Draize Test

#### Respiratory or skin sensitization

#### Skin sensitization

Not classified based on available information.

#### **Respiratory sensitization**

Not classified based on available information.

#### **Components:**

#### Cypermethrin:

Test Type :	Magnusson-Kligman-Test
Species :	Guinea pig
Assessment :	Did not cause sensitization on laboratory animals.
Result :	Not a skin sensitizer.

#### Germ cell mutagenicity

Not classified based on available information.

### **Components:**

#### Cypermethrin:

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro Test system: Human lymphocytes Result: negative

> Test Type: Microbial mutagenesis assay (Ames test) Result: negative

Test Type: sister chromatid exchange assay



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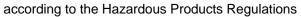
Version 1.11	Revision Date: 09/30/2023	SDS Numbe 6116888-000	
		Test syst Result: n	em: Human lymphocytes egative
Geno	otoxicity in vivo	Species:	on Route: Oral
		Species:	on Route: Dermal
		Species:	on Route: Intraperitoneal injection
	n cell mutagenicity - essment	: Weight o cell muta	f evidence does not support classification as a germ gen.
Susp	roductive toxicity bected of damaging fertili aponents:	ty.	
<u>Com</u> Cype		: Test Typ Species: Applicatio	e: Fertility Rat, male on Route: Oral
			LOAEL: 68 mg/kg body weight ns: Effects on fertility., male reproductive effects, Tes- fects
		Species: Application Fertility:	e: Fertility Rat, male on Route: Oral NOAEL: 6.25 mg/kg body weight rgans: male reproductive organs, Testis
Effec	cts on fetal development	Species: Application General Sympton	e: Three-generation reproduction toxicity study Mouse on Route: Oral Toxicity Maternal: NOAEL: 5 mg/kg body weight ns: No effects on fetal development., No effect on tion capacity., Reduced body weight
		test Species:	e: Reproduction/Developmental toxicity screening Rabbit on Route: Oral



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Reproduc	tive toxicity - As-		Symptoms: No eff Test Type: Repro test Species: Rat Application Route	OAEL: 30 mg/kg body weight fects on fetal development. duction/Developmental toxicity screening
-	tive toxicity - As-		test Species: Rat Application Route	
-	tive toxicity - As-			e: Oral OAEL: 17.5 mg/kg body weight fects on fetal development.
		:		f adverse effects on sexual function and animal experiments.
	<b>igle exposure</b> e damage to organs	s (Ne	ervous system).	
Compone				
Cyperme				
Target Or Assessme	gans	:	Nervous system May cause damag	ge to organs.
STOT-rej	peated exposure			
Not class	ified based on availa	able	information.	
Repeated	dose toxicity			
Compone	ents:			
Cyperme	thrin:			
Species NOAEL		:	Rat 5 mg/kg	
Applicatio	n Route	÷	5 mg/kg Oral	
Exposure		:	3 Months	
Target Or	gans	:	Central nervous s	system
Species		:	Rabbit	
NOAEL	- Davida	:	12.5 mg/kg	
Applicatio Exposure		:	Oral 3 Months	
Target Or		:	Central nervous s	system
Species		:	Dog	
NOAEL		:	1 mg/kg	
Applicatio		:	Oral	
Exposure Symptom		:	1 y anxiety, central ne	ervous system effects
Species		:	Rabbit	
NOAEL	_	:	20 mg/kg	
Applicatio		:	Dermal	
Exposure Target Or			3 Weeks male reproductive	organs
Symptom		:		ight gain, reduced food consumption





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-	<b>ation toxicity</b> assified based on availa	ble	information.	
Expe	rience with human exp	osı	ıre	
Com	oonents:			
•••	rmethrin: ral Information	:	Remarks: Based	cle weakness, central nervous system effect on Human Evidence on side effects are:
Furth	er information			
<u>Com</u>	oonents:			
<b>Cype</b> Rema	<b>rmethrin:</b> urks		Dermal absorptio	n nossible
	12. ECOLOGICAL INFO	DRM		
CTION		DRI		
CTION Ecoto <u>Com</u>	12. ECOLOGICAL INFO	DRI		
CTION Ecoto <u>Com</u> Cype	12. ECOLOGICAL INFO	DRM :	MATION	chus mykiss (rainbow trout)): 0.39 μg/l
CTION Ecoto <u>Com</u> Cype	12. ECOLOGICAL INFO oxicity <u>conents:</u> rmethrin:	DRI :	MATION EC50 (Oncorhyn Exposure time: 9	chus mykiss (rainbow trout)): 0.39 μg/l 6 h on variegatus (sheepshead minnow)): 0.95
CTION Ecoto Comp Cype Toxic	12. ECOLOGICAL INFO oxicity <u>conents:</u> rmethrin:	:	MATION EC50 (Oncorhyn Exposure time: 9 EC50 (Cyprinodo µg/l Exposure time: 9	chus mykiss (rainbow trout)): 0.39 μg/l 6 h on variegatus (sheepshead minnow)): 0.95 6 h nagna (Water flea)): 0.0036 μg/l
CTION Ecoto Comp Cype Toxic	12. ECOLOGICAL INFO	:	MATION EC50 (Oncorhyn Exposure time: 9 EC50 (Cyprinodc µg/l Exposure time: 9 EC50 (Daphnia n Exposure time: 4	chus mykiss (rainbow trout)): 0.39 µg/l 6 h on variegatus (sheepshead minnow)): 0.95 6 h nagna (Water flea)): 0.0036 µg/l 8 h
CTION Ecoto Comp Cype Toxic	12. ECOLOGICAL INFO	:	MATION EC50 (Oncorhyn Exposure time: 9 EC50 (Cyprinodo µg/l Exposure time: 9 EC50 (Daphnia n Exposure time: 4 EC50 (Americam Exposure time: 4	chus mykiss (rainbow trout)): 0.39 μg/l 6 h on variegatus (sheepshead minnow)): 0.95 6 h nagna (Water flea)): 0.0036 μg/l 8 h nysis): 0.00475 μg/l 8 h

### Persistence and degradability

### **Components:**

#### Cypermethrin:



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ersion 11	Revision Date: 09/30/2023		DS Number: 16888-00012	Date of last issue: 03/02/2023 Date of first issue: 07/15/2020
Stabil	lity in water	:	Degradation half	life (DT50): 17 d
Bioad	ccumulative potential			
Com	ponents:			
	rmethrin: cumulation	:	Bioconcentration	factor (BCF): 488
	ion coefficient: n- ol/water	:	log Pow: 6.6	
Mobi	lity in soil			
Com	ponents:			
Суре	rmethrin:			
menta	bution among environ- al compartments lity in soil	:	log Koc: 5.58	
Othe	r adverse effects			
No da	ata available			

### SECTION 13. DISPOSAL CONSIDERATIONS

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

### SECTION 14. TRANSPORT INFORMATION

#### International Regulations

UNRTDG		
UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Cypermethrin)
Class	:	9
Packing group	:	
Labels	:	9
Environmentally hazardous	:	yes
IATA-DGR		
UN/ID No.	:	UN 3082
Proper shipping name	:	Environmentally hazardous substance, liquid, n.o.s. (Cypermethrin)
Class	:	9
Packing group	:	III
Labels	:	Miscellaneous





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Packir aircraf	ng instruction (cargo	:	964	
Packir	Packing instruction (passen- ger aircraft)		964	
	nmentally hazardous	:	yes	
UN nu Proper Class Packir Labels	IMDG-Code UN number Proper shipping name Class Packing group Labels EmS Code		UN 3082 ENVIRONMENT/ N.O.S. (Cypermethrin) 9 III 9 F-A, S-F yes	ALLY HAZARDOUS SUBSTANCE, LIQUID,
Trans	Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable for product as supplied.			
Domestic regulation				
<b>TDG</b> UN nu Bropor	mber	:	UN 3082	

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
		N.O.S.
		(Cypermethrin)
Class	:	9
Packing group	:	III
Labels	:	9
ERG Code	:	171
Marine pollutant	:	yes(Cypermethrin)

#### 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		
DSE	•	not determined		
IECSC	:	not determined		

### **SECTION 16. OTHER INFORMATION**

### Full text of other abbreviations



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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	:	09/30/2023 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.

CA / Z8