

Version	Revision Date:	SDS Number:	Date of last issue: 09/30/2023
1.3	02/20/2024	10848148-00004	Date of first issue: 09/09/2022

SECTION 1. IDENTIFICATION

Product name Other means of identification		Levamisole Hydrochloride (8%) Liquid Formulation COOPERS NILVERM LV ORAL WORMER (36152)		
Manufacturer or supplier's d	leta	ills		
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 OSHA Hazard Communication Standard (29 CFR				
1910.1200) Reproductive toxicity	:	Category 2		
Specific target organ toxicity - repeated exposure (Oral)	:	Category 2 (Blood, Testis)		
GHS label elements				
Hazard pictograms	:			
Signal Word	:	Warning		
Hazard Statements	:	H361d Suspected of damaging the unborn child. H373 May cause damage to organs (Blood, Testis) through prolonged or repeated exposure if swallowed.		
Precautionary Statements	:	Prevention:		
		 P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P260 Do not breathe mist or vapors. P280 Wear protective gloves, protective clothing, eye protection and face protection. 		
		Response:		
		P308 + P313 IF exposed or concerned: Get medical attention.		
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Storage:

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
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Components

Chemical name	CAS-No.	Concentration (% w/w)
Levamisole hydrochloride	16595-80-5	7.77
Citric acid	77-92-9	1.95

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.
Most important symptoms and effects, both acute and delayed Protection of first-aiders	:	Suspected of damaging the unborn child. May cause damage to organs through prolonged or repeated exposure if swallowed. 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



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m S fiç H	iedia pecific ghting azard	uble extinguishing c hazards during fire ous combustion prod-	:	Carbon dioxide (C Dry chemical None known. Exposure to comb Carbon oxides	CO2) Dustion products may be a hazard to health.
ucts Specific extinguishing meth- ods Special protective equipment for fire-fighters		:	cumstances and t Use water spray t Remove undamag so. Evacuate area.	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 a, wear self-contained breathing apparatus. ective equipment.	
SECTI	SECTION 6. ACCIDENTAL RELEA			E MEASURES	
tiv	ve equ	al precautions, protec- upment and emer- procedures	:		ective equipment. ing advice (see section 7) and personal ent recommendations (see section 8).

Environmental precautions	:	Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g., by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for	:	Soak up with inert absorbent material.

	Methods and materials for containment and cleaning up		Soak up with inert absorbent material. For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.
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SECTION 7. HANDLING AND STORAGE

Technical measures	:	See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
Local/Total ventilation Advice on safe handling		Use only with adequate ventilation. Do not breathe mist or vapors.



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		Do not swallow. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment Take care to prevent spills, waste and minimize release to the environment.				
Conditions for safe storage		: Keep in proper Store locked u				
Materials to avoid		 Store in accordance with the particular national regulations. Do not store with the following product types: Strong oxidizing agents Gases 				

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

	(Form of exposure)	Control parame- ters / Permissible concentration	Basis
16595-80-5	TŴA	20 µg/m3 (OEB 3)	Internal
Further inform	urther information: Skin		
	Wipe limit	200 µg/100 cm ²	Internal
			•
	: Use appropri	exposure) 16595-80-5 TWA Further information: Skin Wipe limit Use appropriate engineering	exposure)concentration16595-80-5TWA20 µg/m3 (OEB 3)Further information: Skin

Ingredients with workplace control parameters

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.
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Personal protective equipment

Respiratory protection	:	General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

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Hand	protection		
Material :		: Chemical-resist	ant gloves
	emarks rotection	 Consider double gloving. Wear safety glasses with side shields or goggles. If the work environment or activity involves dusty conditionists or aerosols, wear the appropriate goggles. Wear a faceshield or other full face protection if there is potential for direct contact to the face with dusts, mists, or aerosols. 	
Skin a	and body protection	: Work uniform o Additional body task being perfo disposable suits	r laboratory coat. garments should be used based upon the prmed (e.g., sleevelets, apron, gauntlets, s) to avoid exposed skin surfaces. e degowning techniques to remove potentially lothing.
Hygiene measures		: If exposure to c eye flushing sys working place. When using do Wash contamin The effective op engineering cor appropriate deg	hemical is likely during typical use, provide stems and safety showers close to the not eat, drink or smoke. ated clothing before re-use. beration of a facility should include review of ntrols, proper personal protective equipment, gowning and decontamination procedures, ne monitoring, medical surveillance and the

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Color	:	clear
		yellow
Odor	:	No data available
Odor Threshold	:	No data available
рН	:	No data available
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	No data available
Flash point	:	No data available
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable



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Flam	nability (liquids)	:	No data available	9
	r explosion limit / Upper ability limit	:	No data available	9
	r explosion limit / Lower ability limit	:	No data available	9
Vapor	pressure	:	No data available	9
Relati	ve vapor density	:	No data available	9
Relati	ve density	:	No data available	9
Densi	ty	:	No data available	9
	ility(ies) ater solubility	:	No data available	9
	on coefficient: n- ol/water	:	Not applicable	
	gnition temperature	:	No data available	9
Decor	mposition temperature	:	No data available	9
Visco: Vis	sity scosity, kinematic	:	No data available	9
Explo	sive properties	:	Not explosive	
Oxidiz	zing properties	:	The substance o	r mixture is not classified as oxidizing.
Molec	ular weight	:	No data available	9
Partic	le size	:	Not applicable	

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	·····
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reac- tions	:	Can react with strong oxidizing agents.
Conditions to avoid	:	None known.
Incompatible materials	:	Oxidizing agents
Hazardous decomposition products	:	No hazardous decomposition products are known.



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SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes Inhalation Skin contact Ingestion Eye contact	of	exposure
Acute toxicity		
Not classified based on availa	able	information.
Product:		
Acute oral toxicity	:	Acute toxicity estimate: 2,317 mg/kg Method: Calculation method
Components:		
Levamisole hydrochloride:		
Acute oral toxicity	:	LD50 (Rat): 180 mg/kg
		LD50 (Mouse): 223 mg/kg
		LD50 (Rabbit): 458 mg/kg
Acute inhalation toxicity	:	Remarks: No data available
Acute dermal toxicity	:	Remarks: No data available
Citric acid:		
Acute oral toxicity	:	LD50 (Mouse): 5,400 mg/kg
Acute dermal toxicity	:	LD50 (Rat): > 2,000 mg/kg Method: OECD Test Guideline 402 Assessment: The substance or mixture has no acute dermal toxicity
Skin corrosion/irritation Not classified based on availa	able	e information.
Components:		
Levamisole hydrochloride: Remarks	:	No data available
Citric acid:		
0		

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



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		s eye damage/eye irri ssified based on availa onents:			
	Levam i Remark	i sole hydrochloride: ks	:	No data available	
	Citric a Species Result Method	3	: :	Rabbit Irritation to eyes, r OECD Test Guide	eversing within 21 days line 405
	Respira	atory or skin sensitiza	atio	n	
		ensitization ssified based on availa	ble	information.	
		atory sensitization ssified based on availa	ble	information.	
	<u>Compo</u>	onents:			
	Levam i Remark	i sole hydrochloride: ks	:	No data available	
		ell mutagenicity ssified based on availa	ble	information.	
	<u>Compo</u>	onents:			
		isole hydrochloride: xicity in vitro	:	Test Type: Bacter Result: negative	ial reverse mutation assay (AMES)
				Test Type: Chrom Result: negative	osome aberration test in vitro
	Citric a	cid:			
		xicity in vitro	:	Test Type: Bacter Result: negative	ial reverse mutation assay (AMES)
				Test Type: in vitro Result: positive	micronucleus test
				Test Type: Bacter Result: negative	ial reverse mutation assay (AMES)
	Genoto	xicity in vivo	:		enicity (in vivo mammalian bone-marrow hromosomal analysis)

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		Application Ro Result: negativ	
	ogenicity assified based on avail	lable information.	
Comp	onents:		
Levarr	nisole hydrochloride:	:	
	ation Route ure time L	: Mouse : Oral : 2 Years : 80 mg/kg body : No significant a	weight adverse effects were reported
	ation Route ure time L	: Rat : Oral : 2 Years : 40 mg/kg body : No significant :	weight adverse effects were reported
IARC			ent at levels greater than or equal to 0.1% is r confirmed human carcinogen by IARC.
OSHA		ent of this product pre ist of regulated carci	esent at levels greater than or equal to 0.1% is nogens.
NTP			ent at levels greater than or equal to 0.1% is ed carcinogen by NTP.
•	ductive toxicity cted of damaging the u	unborn child.	
Comp	onents:		
Levarr	isole hydrochloride:	:	
Effects	on fertility	Species: Rat Application Ro	ee-generation reproduction toxicity study ute: Oral nificant adverse effects were reported
Effects	on fetal development	Species: Rat Application Ro	I Toxicity: NOAEL: 20 mg/kg body weight
		Species: Rabb Application Ro	ute: Oral I Toxicity: LOAEL: 40 mg/kg body weight



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	Reproductive toxicity - As- sessment		: Some evidence of adverse effects on development, based animal experiments.				
	Citric a						
	Effects on fetal development		:	 Test Type: One-generation reproduction toxicity study Species: Rat Application Route: Ingestion Result: negative 			
	STOT-single exposure Not classified based on available information.						
			bie	information.			
		onents:					
	Citric a			• • • • • • • • • • • • •			
	Assess	sment	÷	: May cause respiratory irritation.			
	STOT-repeated exposure May cause damage to organs (Blood, Testis) through prolonged or repeated exposit lowed.			h prolonged or repeated exposure if swal-			
<u>Components:</u>							
			Blood, Testis May cause damag exposure.	ge to organs through prolonged or repeated			
	Repeated dose toxicity						
	Compo	onents:					
	Levam	isole hydrochloride:					
	Exposu		: :	Rat 2.5 mg/kg Oral 18 Months Testis			
	Exposu		:	Dog 20 mg/kg Oral 18 Months Blood			
			:	Dog 40 mg/kg Oral 3 Months			

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		S	:	Rat 4,000 mg/kg 8,000 mg/kg Ingestion 10 Days		
	Aspiration toxicity Not classified based on available information.					
	Experience with human exposure					
	Compo	onents:				
	Levam Ingestic	isole hydrochloride: on	:	Symptoms: Nause tension	ea, Vomiting, Headache, Dizziness, hypo-	
SEC	CTION 1	2. ECOLOGICAL INFO	DRN	IATION		
	Ecotox	licity				
	Compo	onents:				
		isole hydrochloride: / to fish	:	LC50 (Oryzias lat Exposure time: 96 Method: OECD Te		
		to daphnia and other invertebrates	:	EC50 (Daphnia m Exposure time: 48 Method: OECD Te		
	Citric a	acid:				
	Toxicity	/ to fish	:	LC50 (Pimephale Exposure time: 96	s promelas (fathead minnow)): > 100 mg/l 3 h	
		v to daphnia and other invertebrates	:	EC50 (Daphnia m Exposure time: 24	agna (Water flea)): 1,535 mg/l I h	
	Persist	tence and degradabili	ty			
	Compo	onents:				
	Citric a Biodeg	acid: radability	:	Result: Readily bi Biodegradation: 5 Exposure time: 28 Method: OECD To	97 %	



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Bioac	cumulative potential			
Comp	oonents:			
	acid: on coefficient: n- ol/water	: log Pow: -1.72		
	ity in soil ita available			
•	adverse effects ata available			
SECTION	13. DISPOSAL CONS	IDERATIONS		

Waste from residues	:	Dispose of in accordance with local regulations. Do not dispose of waste into sewer.
Contaminated packaging	:	Empty containers should be taken to an approved waste handling site for recycling or disposal. If not otherwise specified: Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

Not regulated as a dangerous good

IATA-DGR Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable for product as supplied.

Not applicable for product as st

Domestic regulation

49 CFR Not regulated as a dangerous good

Special precautions for user

Not applicable

SECTION 15. REGULATORY INFORMATION

CERCLA Reportable Quantity

Listed substances in the product are at low enough levels to not be expected to exceed the RQ

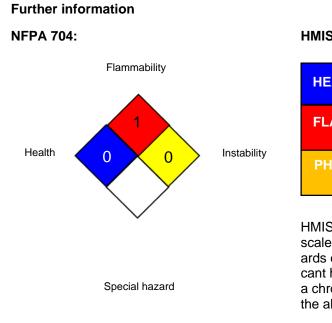
SARA 304 Extremely Hazardous Substances Reportable Quantity

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



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	SARA 302 Extremely Hazardous Substances Threshold Planning Quantity This material does not contain any components with a section 302 EHS TPQ.							
	A 311/312 Hazards	:	Reproductive toxicity Specific target organ toxicity (single or repeated exposure)					
SAR	A 313	:	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.					
US S	US State Regulations							
Penn	sylvania Right To Kno Water Levamisole hydrod Sodium hydroxide	chlor	ide	7732-18-5 16595-80-5 1310-73-2				
The i	The ingredients of this product are reported in the following inventories:							
AICS		:	not determined					
DSL		:	not determined					
IECS	С	:	not determined					

SECTION 16. OTHER INFORMATION



HMIS® IV:



HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Full text of other abbreviations



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

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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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