

according to the Globally Harmonized System

Isoeugenol Formulation

Version	Revision Date: 28.09.2024	SDS Number:	Date of last issue: 30.09.2023
5.0		4741411-00014	Date of first issue: 13.08.2019

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Isoeugenol Formulation
Manufacturer or supplier's de Company	eta :	ils MSD
Address	:	Briahnager - Off Pune Nagar Road Wagholi - Pune - India 412 207
Telephone	:	+1-908-740-4000
Emergency telephone number	:	+1-908-423-6000
E-mail address	:	EHSDATASTEWARD@msd.com
Recommended use of the ch	em	ical and restrictions on use
Recommended use Restrictions on use	:	Veterinary product Not applicable

2. HAZARDS IDENTIFICATION

Manufacture, Storage and Import of Hazardous Chemicals Rules 1989

Classification

Not classified as hazardous according to criteria laid down in Part I of Schedule-1.

GHS Classification

Acute toxicity (Oral)	:	Category 5
Acute toxicity (Inhalation)	:	Category 4
Acute toxicity (Dermal)	:	Category 5
Skin corrosion/irritation	:	Category 2
Serious eye damage/eye irri- tation	:	Category 2A
Skin sensitisation	:	Category 1
Specific target organ toxicity - single exposure	:	Category 3
Short-term (acute) aquatic hazard	:	Category 2
Long-term (chronic) aquatic	:	Category 3



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hazar	d							
GHS	label elements							
Haza	rd pictograms							
Signa	l word	: Warning						
Haza	rd statements	skin. H315 + H319 H317 May cau H332 Harmful H335 May cau H401 Toxic to	 H303 + H313 May be harmful if swallowed or in contact with skin. H315 + H319 Causes skin irritation and serious eye irritation. H317 May cause an allergic skin reaction. H332 Harmful if inhaled. H335 May cause respiratory irritation. H401 Toxic to aquatic life. H412 Harmful to aquatic life with long lasting effects. 					
Preca	utionary statements	P264 Wash ha P271 Use only P272 Contami the workplace P273 Avoid re	eathing vapours. ands thoroughly after handling. outdoors or with adequate ventilation. nated work clothing should not be allowed out lease to the environment. ptective gloves/ eye protection/ face protection					
		rash occurs: G P302 + P352 - Get medical he P304 + P340 - and keep com P305 + P351 - for several mir easy to do. Co P337 + P317 I	 P317 IF INHALED: Remove person to fresh a fortable for breathing. Get medical help. P338 IF IN EYES: Rinse cautiously with wate nutes. Remove contact lenses, if present and 					
		Storage: P405 Store loo	sked up					
		Disposal:	of contents/ container to an approved waste					

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS



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Subst	tance / Mixture	:	Mixture					
Com	ponents							
Cherr	nical name			CAS-No.	Concentration (% w/w)			
Isoeu	genol			97-54-1	>= 50 - < 70			
FIRST /	AID MEASURES							
Gene	ral advice	:	vice immediately	cident or if you feel unwo s persist or in all cases of				
lf inha	aled	:	If inhaled, removing of the second se	re to fresh air. give artificial respiration. ficult, give oxygen. ntion if symptoms occur.				
In cas	se 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 cas	se of eye contact	 Thoroughly clean shoes before reuse. In case of contact, immediately flush eyes with plenty of wate for at least 15 minutes. If easy to do, remove contact lens, if worn. 						
If swallowed			Get medical attention. If swallowed, DO NOT induce vomiting. Get medical attention if symptoms occur.					
and e delay	important symptoms affects, both acute and ed	 Rinse mouth thoroughly with water. May be harmful if swallowed or in contact with skin. Causes skin irritation and serious eye irritation. May cause an allergic skin reaction. Harmful if inhaled. 						
Prote	ction of first-aiders	:	and use the reco	ratory irritation. ders should pay attentior ommended personal prot ial for exposure exists (si	ective equipment			
Notes	s to physician	:		tically and supportively.				
FIREFIC	GHTING MEASURES							
Suital	ble extinguishing media	:	Water spray Alcohol-resistan Carbon dioxide (Dry chemical					
Unsu media	itable extinguishing a	:	None known.					
Speci fightir	ific hazards during fire-	:	Exposure to con	nbustion products may be	e a hazard to health.			
Haza ucts	rdous combustion prod-	:	Carbon oxides					



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	Specific extinguishing meth- ods		:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to so. Evacuate area.		
	Special protective equipment for firefighters		:	In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.		
6. A	CCIDEN	ITAL RELEASE MEAS	SUF	RES		
	Personal precautions, protec- tive equipment and emer- gency procedures		:	Use personal protective equipment. Follow safe handling advice (see section 7) and personal pro- tective equipment recommendations (see section 8).		
	Environ	mental precautions	:	Prevent spreading barriers). Retain and dispos	akage or spillage if safe to do so. g over a wide area (e.g. by containment or oil se of contaminated wash water. should be advised if significant spillages	
		ls and materials for ment and cleaning up	:	For large spills, pr ment to keep mate be pumped, store Clean up remaining bent. Local or national r posal of this mate employed in the c mine which regular Sections 13 and 1	absorbent material. ovide dyking or other appropriate contain- erial from spreading. If dyked material can recovered material in appropriate container. og materials from spill with suitable absor- regulations may apply to releases and dis- rial, as well as those materials and items leanup of releases. You will need to deter- tions are applicable. 5 of this SDS provide information regarding tional requirements.	

7. HANDLING AND STORAGE

Technical measures		ee Engineering measures under EXPOSURE ONTROLS/PERSONAL PROTECTION section.
Local/Total ventilation		sufficient ventilation is unavailable, use with local exhaust entilation.
Advice on safe handling	Di Di W Hi pr	o not get on skin or clothing. o not breathe vapours. o not swallow. o not get in eyes. 'ash skin thoroughly after handling. andle in accordance with good industrial hygiene and safety actice, based on the results of the workplace exposure as-



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C	onditions for safe storage	to asthma, alle should consult tory irritants or Take care to pu environment.	sed individuals, and those susceptible rgies, chronic or recurrent respiratory disease, their physician regarding working with respira-			
Materials to avoid		Store locked up Keep tightly clo Keep in a cool, Store in accord : Do not store wi	 Store locked up. Keep tightly closed. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations. Do not store with the following product types: 			
		Strong oxidizin	g agents			

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

CAS-No.	Value type	Control parame-	Basis	
	(Form of	ters / Permissible		
	exposure)	concentration		
97-54-1	TWA	250 µg/m3 (OEB 2)	Internal	
Further infor	Further information: DSEN			
	Wipe limit	100 µg/100 cm ²	Internal	
	97-54-1	(Form of exposure) 97-54-1 Further information: DSEN	(Form of exposure) ters / Permissible concentration 97-54-1 TWA 250 μg/m3 (OEB 2) Further information: DSEN 250 μg/m3 (OEB 2)	

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. Laboratory operations do not require special containment.
Personal protective equipn	nent	
Respiratory protection	:	No personal respiratory protective equipment normally re- quired.
Hand protection Material	:	Chemical-resistant gloves
Eye protection	:	Wear safety glasses with side shields or goggles. If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles. Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols.
Skin and body protection	:	Work uniform or laboratory coat.
Hygiene measures	:	If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place.

When using do not eat, drink or smoke.

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			workplace. Wash contamin The effective op engineering cor appropriate deg	work clothing should not be allowed out of the ated clothing before re-use. beration of a facility should include review of atrols, proper personal protective equipment, wowning and decontamination procedures, he monitoring, medical surveillance and the rative controls.
. PHYSIC	CAL AND CHEMICAL PR	ROP	ERTIES	
Appe	arance	:	viscous liquid	
Colou	ır	:	yellow	
Odou	r	:	floral	
Odou	r Threshold	:	No data availa	ble
рΗ		:	No data availa	ble
Meltir	ng point/freezing point	:	No data availa	ble
Initial range	boiling point and boiling	:	266 °C	
Flash	point	:	No data availa	ble
Evap	oration rate	:	No data availa	ble
Flam	mability (solid, gas)	:	Not applicable	
Flam	mability (liquids)	:	No data availa	ble
	r explosion limit / Upper nability limit	:	No data availa	ble
	r explosion limit / Lower nability limit	:	No data availa	ble
Vapo	ur pressure	:	< 0.02 mmHg (25 °C)
Relat	ive vapour density	:	No data availa	ble
Relat	ive density	:	No data availa	ble
Dens	ity	:	No data availa	ble
	ility(ies) ater solubility	:	dispersible	
So	blubility in other solvents	:	soluble Solvent: Ethan	ol
Partit	ion coefficient: n-	:	Not applicable	

SDS Number:





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Auto	nol/water p-ignition temperature omposition temperature	:	No data available No data available			
Visc	osity /iscosity, kinematic	:	No data available			
	losive properties	:	Not explosive			
	Oxidizing properties Molecular weight		The substance o	r mixture is not classified as oxidizing.		
Part	icle characteristics icle size	:	Not applicable	·		
10. STA		(
Che Post tions Con	Reactivity Chemical stability Possibility of hazardous reac- tions Conditions to avoid		Stable under nor Can react with st None known.	rong oxidizing agents.		
Haz	Incompatible materials Hazardous decomposition products		Oxidizing agents No hazardous de	composition products are known.		
11. TOXI		ΓΙΟΝ	I			
	Information on likely routes of exposure		Inhalation Skin contact Ingestion Eye contact			
May	te toxicity be harmful if swallowed o mful if inhaled.	or in	contact with skin.			
	<u>duct:</u> te oral toxicity	: Acute toxicity estimate: 2,580 mg/kg Method: Calculation method				
Acu	te inhalation toxicity	:	Acute toxicity esti Exposure time: 4 Test atmosphere: Method: Calculati	h dust/mist		
Acu	te dermal toxicity	:	Acute toxicity esti Method: Calculati	mate: 3,824 mg/kg on method		

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<u>Comp</u>	onents:		
Isoeu	genol:		
	oral toxicity	: LD50 (Rat)): 1,290 mg/kg
Acute	inhalation toxicity	Exposure t Test atmos	city estimate: > 1 - 5 mg/l ime: 4 h sphere: dust/mist xpert judgement
Acute	dermal toxicity	: LD50 (Rab	bit): 1,912 mg/kg
	corrosion/irritation		
<u>Comp</u>	onents:		
Isoeu	-		
Specie Result		: Rabbit : Skin irritati	on
Result			eyes, reversing within 21 days
Respi	ratory or skin sens	itisation	
	ensitisation ause an allergic skin	reaction.	
-	ratory sensitisation		
<u>Comp</u>	onents:		
Isoeug Test T Expos Specie Metho Result	ype ure routes es d	: Maximisati : Skin conta : Humans : OECD Tes : positive	
Test T Expos Specie Metho Result	ure routes es d	: Maximisati : Skin conta : Guinea pig : OECD Tes : positive	ct
Asses		. Drobobility	or evidence of high skin sensitisation rate in h

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Germ cell mutagenicity

Not classified based on available information.

Components:

Isoeugenol:

Genotoxicity in vitro	: Test Type: Bacterial reverse mutation assay (AMES) Result: negative
	Test Type: Chromosome aberration test in vitro Result: negative
Genotoxicity in vivo	: Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Mouse Application Route: Ingestion Result: negative

Carcinogenicity

Not classified based on available information.

Reproductive toxicity

Not classified based on available information.

Components:

Isoeugenol:

Effects on fertility	: Test Type: Two-generation reproduction toxicity study Species: Rat Application Route: Ingestion Result: negative
Effects on foetal develop- ment	: Test Type: Embryo-foetal development Species: Rat Application Route: Ingestion Result: negative

STOT - single exposure

May cause respiratory irritation.

Components:

Isoeugenol:		
Assessment Remarks	:	May cause respiratory irritation.
Remarks	:	Based on data from similar materials

STOT - repeated exposure

Not classified based on available information.



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Repeated dose toxicity

Components:

Isoeugenol:

Species NOAEL	:	Rat
NOAEL	:	75 mg/kg
LOAEL	:	150 mg/kg
Application Route	:	Ingestion
Exposure time	:	14 Weeks

Aspiration toxicity

Not classified based on available information.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Isoeugenol: Toxicity to fish	:	EC50 (Oncorhynchus mykiss (rainbow trout)): 5.1 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 7.5 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	ErC50 (Skeletonema costatum (marine diatom)): 3.76 mg/l Exposure time: 72 h
		NOEC (Skeletonema costatum (marine diatom)): 1.7 mg/l Exposure time: 72 h
Toxicity to daphnia and other aquatic invertebrates (Chron- ic toxicity)	:	NOEC: 0.4 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211

Components:

Isoeugenol:

Biodegradability	: Result: Readily biodegradable.
	Biodegradation: 79 %
	Exposure time: 28 d
	Method: OECD Test Guideline 301F

Bioaccumulative potential

Components:

Isoeugenol:



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	tion coefficient: n- nol/water	:	log Pow: 3.04	
	ility in soil ata available			
	e r adverse effects ata available			
13. DISP0	OSAL CONSIDERATIO	NS		
Disp	osal methods			
Wast	e from residues	:		of waste into sewer. cordance with local regulations.
Cont	aminated packaging	:	dling site for recy	s should be taken to an approved waste han- /cling or disposal. specified: Dispose of as unused product.
14. TRAN	ISPORT INFORMATIO	N		
Inter	national Regulations			
UNR Not r	TDG egulated as a dangerou	us goo	od	
	-DGR egulated as a dangerou	us goo	od	
	G-Code egulated as a dangerou	is goo	Dd	
Not r Tran		ng to l	MO instruments	
Not r Tran Not a Spec	egulated as a dangerou sport in bulk accordir	n g to l s supp	MO instruments	
Not r Tran Not a Spec Not a	egulated as a dangerou sport in bulk accordir applicable for product as cial precautions for us	ng to I s supp ser	MO instruments	
Not r Tran Not a Spec Not a 15. REGU	egulated as a dangerou sport in bulk accordir applicable for product as cial precautions for us applicable JLATORY INFORMATI	ng to I s supp ser ON	IMO instruments	gislation specific for the substance or mix-
Not r Tran Not a Spec Not a 15. REGU Safe ture	egulated as a dangerou sport in bulk accordir applicable for product as applicable JLATORY INFORMATI	ng to l s supp ser ON ment	IMO instruments blied. al regulations/lea	
Not r Tran Not a Spec Not a 15. REGU Safe ture	egulated as a dangerou sport in bulk accordir applicable for product as cial precautions for us applicable JLATORY INFORMATI ty, health and environ components of this pr	ng to l s supp ser ON ment	IMO instruments blied. al regulations/le	gislation specific for the substance or mix-
Not r Tran Not a Spec Not a 15. REGU Safe ture The	egulated as a dangerou sport in bulk accordir applicable for product as cial precautions for us applicable JLATORY INFORMATI ty, health and environ components of this pr	ng to l s supp ser ON ment	IMO instruments blied. al regulations/lea	gislation specific for the substance or mix-

16. OTHER INFORMATION

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Further information

Sources of key data used to : compile the Safety Data Sheet

Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, http://echa.europa.eu/

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

Date format : dd.mm.yyyy

Full text of other abbreviations

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

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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