

Skydrol® LD4 Fire Resistant Hydraulic Fluid

Version 2.2 SDSUS / Pf	Revision Date: 08/09/2016 RD / 0001		0S Number: 0000093409	Date of last issue: 06/02/2015 Date of first issue: 10/24/2013	
SECTION	I 1. IDENTIFICATION				
Prod	uct name	:	Skydrol® LD4 Fir	e Resistant Hydraulic Fluid	
Product code		:	P3410201		
Man	ufacturer or supplier's	deta	ils		
Company name of supplier		:	Eastman Chemical Company		
Address		:	200 South Wilcox Drive Kingsport TN 37660-5280		
Tele	phone	:	(423) 229-2000		
Emergency telephone numbe		er :	For emergency t	-800-424-9300, +1-703-527-3887 CCN7321 ransportation information, in the United States: at 800-424-9300 or call 423-229-2000.	
Recommended use of the cher		chen	nical and restriction	ons on use	
Reco	ommended use	:	Hydraulic fluids		
Restrictions on use :		:	None known.		

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification Skin irritation	: Category 2
Carcinogenicity	: Category 2
GHS label elements Hazard pictograms	
Signal word	: Warning
Hazard statements	: H315 Causes skin irritation. H351 Suspected of causing cancer.
Precautionary statements	 Prevention: P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P264 Wash skin thoroughly after handling. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.



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		P308 + P313 IF e attention. P332 + P313 If sl tion. P362 Take off co Storage: P405 Store locke Disposal:	ON SKIN: Wash with plenty of soap and water. exposed or concerned: Get medical advice/ kin irritation occurs: Get medical advice/ atten- entaminated clothing and wash before reuse. ed up. contents/ container to an approved waste dis-

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Components

Chemical name	CAS-No.	Concentration (% w/w)
Tributyl phosphate	126-73-8	55 - 65
Dibutylphenylphosphate	2528-36-1	20 - 30
Butyl diphenyl phosphate	2752-95-6	5 - 10
7-Oxabicyclo[4.1.0]heptane-3-carboxylic acid, 2- ethylhexyl ester	62256-00-2	< 10
butylated hydroxytoluene	128-37-0	1

SECTION 4. FIRST AID MEASURES

If inhaled	 Move to fresh air. If breathing is difficult, give oxygen. Consult a physician if necessary. 	
In case of skin contact	 Wash off immediately with plenty of water for at least 15 minutes. Get medical attention if symptoms occur. Wash contaminated clothing before reuse. 	
In case of eye contact	 In case of contact, immediately flush eyes with plenty of wate for at least 15 minutes. Get medical attention if symptoms occur. 	ər
If swallowed	 Call a physician or poison control centre immediately. Do not induce vomiting without medical advice. Rinse mouth. Never give anything by mouth to an unconscious person. 	
Most important symptoms and effects, both acute and delayed	Causes skin irritation. Suspected of causing cancer.	



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Notes to physician		:	: Treat symptomatically.		
SECT	TION 5	. FIREFIGHTING MEA	SU	RES	
Suitable extinguishing media		:	Water spray Carbon dioxide (CO2) Dry chemical Foam		
	Unsuitable extinguishing media		:	: Do not use a solid water stream as it may scatter and spread fire.	
	Hazard ucts	ous combustion prod-	:	: carbon dioxide, carbon monoxide oxides of phosphorus	
I	Further information		:		/ to cool fully closed containers. off from fire fighting to enter drains or water

Special protective equipment : Wear an approved positive pressure self-contained breathing apparatus in addition to standard fire fighting gear.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protec- tive equipment and emer- gency procedures	ntilate the area. oid breathing dust/ fume/ gas/ mist/ vapo oid contact with skin and eyes. aterial can create slippery conditions. ear appropriate personal protective equip cal authorities should be advised if signif nnot be contained.	oment.
Environmental precautions :	ear up spills immediately and dispose of oid release to the environment. Illect spillage.	waste safely.
Methods and materials for containment and cleaning up	ntain spillage, soak up with non-combus aterial, (e.g. sand, earth, diatomaceous e d transfer to a container for disposal acc tional regulations (see section 13).	earth, vermiculite)

SECTION 7. HANDLING AND STORAGE

Advice on safe handling	: Do not breathe vapours or spray mist.
	Handle product only in closed system or provide appropriate exhaust ventilation at machinery.
	In case of insufficient ventilation, wear suitable respiratory
	equipment.
	Wear appropriate personal protective equipment.
	Avoid contact with skin, eyes and clothing.



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		Drain or remove or maintenance.	after handling. ted clothing before reuse. substance from equipment prior to break-in ance with good industrial hygiene and safety
Conditions for safe storage		 Store locked up. Keep container tightly closed in a dry and well-ventilated place. Keep in a cool place away from oxidizing agents. 	

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components	CAS-No.	Value type (Form of exposure)	Control parame- ters / Permissible concentration	Basis
Tributyl phosphate	126-73-8	TWA (Inhal- able fraction and vapor)	5 mg/m3	ACGIH
		TWA	0.2 ppm 2.5 mg/m3	NIOSH REL
		TWA	5 mg/m3	OSHA Z-1
		TWA	0.2 ppm 2.5 mg/m3	OSHA P0
Dibutylphenylphosphate	2528-36-1	TWA	0.3 ppm	ACGIH
butylated hydroxytoluene	128-37-0	TWA (Inhal- able fraction and vapor)	2 mg/m3	ACGIH
		TWA	10 mg/m3	NIOSH REL
		TWA	10 mg/m3	OSHA P0

Components with workplace control parameters

Hazardous components without workplace control parameters

Components	CAS-No.
7-Oxabicyclo[4.1.0]heptane-3- carboxylic acid, 2-ethylhexyl ester	62256-00-2

Engineering measures : Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal protective equipment

Respiratory protection

: Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary.



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		cordance w If engineerin tions below or to an acc	selection, use, and maintenance must be in ac- ith regulatory requirements, if applicable. Ing controls do not maintain airborne concentra- recommended exposure limits (where applicable) eptable level (in countries where exposure limits en established), an approved respirator must be		
Hand	protection				
Remarks		ing permeal by the supp specific loca such as the After contar	ble gloves. Please observe the instructions regard- bility and breakthrough time which are provided lier of the gloves. Also take into consideration the al conditions under which the product is used, danger of cuts, abrasion, and the contact time. nination with product change the gloves immedi- spose of them according to relevant national and tions.		
Eye protection : Wear safety glasses with s		glasses with side shields (or goggles).			
Skin a	and body protection	: Wear suitab	le protective clothing.		
Protective measures			: Ensure that eye flushing systems and safety showers are located close to the working place.		

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: oily
Colour	: purple
Odour	: odourless
рН	: No data available
Melting point/range	: < -62 °C
Flash point	: 160 °C Method: Cleveland open cup
Vapour pressure	: 0.27 hPa (25 °C)
Relative density	: 1.004 - 1.014 (25 °C)
Viscosity Viscosity, kinematic	: < 2000 mm2/s (-54 °C)
	11.15 mm2/s (38 °C)
	3.83 mm2/s (99 °C)



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SECTION 10. STABILITY AND REACTIVITY

Reactivity	: None reasonably foreseeable.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reac- tions	: None known.
Conditions to avoid	: None known.
Incompatible materials	: Strong oxidizing agents
Hazardous decomposition products	: Emits acrid smoke and fumes when heated to decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

Product:	
Acute oral toxicity	: LD50 (Rat, Male and Female): 2,100 mg/kg
Acute inhalation toxicity	 LC50 (Rat, male): > 5.8 mg/l Exposure time: 4 h Test atmosphere: dust/mist Assessment: The substance or mixture has no acute inhala- tion toxicity Remarks: (highest concentration tested)
Acute dermal toxicity	 LD50 Dermal (Rabbit, Male and Female): > 3,160 mg/kg Assessment: The substance or mixture has no acute dermal toxicity
<u>Components:</u>	
Tributyl phosphate: Acute oral toxicity	 LD50 Oral (Rat, Male and Female): 1,553 mg/kg Method: Acute Oral Toxicity Assessment: Harmful if swallowed.
Acute inhalation toxicity	 LC50 (Rat, Male and Female): > 4.242 mg/l Exposure time: 4 h Test atmosphere: dust/mist Assessment: The substance or mixture has no acute inhala- tion toxicity
Acute dermal toxicity	 LD50 Dermal (Rabbit, Male and Female): > 3,100 mg/kg Assessment: The substance or mixture has no acute dermal toxicity
Dibutylphenylphosphate:	



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	oral toxicity	mg/kg	y estimate (Rat, Male and Female): 2,400 - 3,000
		Assessment	: Not classified
Acute	inhalation toxicity	Exposure tin	Male and Female): > 5 mg/l ne: 4 h here: dust/mist
		Exposure tin Test atmosp	Male and Female): > 5 mg/l ne: 4 h here: dust/mist : Not classified
Acute	dermal toxicity		al (Rabbit, Male and Female): > 5,000 mg/kg : Not classified
	abicyclo[4.1.0]heptan oral toxicity		id, 2-ethylhexyl ester: Rat, Male and Female): 4,470 mg/kg
Acute	dermal toxicity	: LD50 Derma	al (Rabbit, Male and Female): > 7,940 mg/kg
butvl	ated hydroxytoluene	:	
	oral toxicity		Rat): > 6,000 mg/kg
Acute	dermal toxicity	: LD50 Derma	al (Guinea pig): > 20,000 mg/kg
Skin	corrosion/irritation		
Cause	es skin irritation.		
Produ	uct:		
Expos Asses	es: Rabbit sure time: 24 h ssment: irritating t: moderate irritation		
	<u>oonents:</u> tyl phosphate:		
Expos Asses Metho	es: Rabbit sure time: 4 h ssment: Causes skin ir od: Acute Dermal Irrita t: irritating		
Speci	ylphenylphosphate: es: Rabbit ssment: Not classified		
Expos	es: Humans sure time: 24 h ssment: Not classified		
7-0xa		e-3-carboxylic ac	id, 2-ethylhexyl ester:

Species: Rabbit



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Exposure time: 24 h Assessment: Not classified as hazardous. Result: slight to moderate irritation

butylated hydroxytoluene:

Species: Rabbit Exposure time: 24 h Result: very slight

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Species: Rabbit Result: slight Exposure time: 24 h Assessment: Not classified

Components:

Tributyl phosphate: Species: Rabbit Result: slight irritation Exposure time: 24 h Assessment: Not classified Method: Acute Eye Irritation / Corrosion

Dibutylphenylphosphate:

Species: Rabbit Result: slight Assessment: Not classified

7-Oxabicyclo[4.1.0]heptane-3-carboxylic acid, 2-ethylhexyl ester:

Species: Rabbit Result: slight irritation Exposure time: 24 h Assessment: Not classified

butylated hydroxytoluene:

Species: Rabbit Result: none

Respiratory or skin sensitisation

Skin sensitisation: Not classified based on available information. Respiratory sensitisation: Not classified based on available information.

Product:

Test Type: Human experience Assessment: Not classified Method: Human Repeat Insult Patch Test Result: Does not cause skin sensitisation.

Components:



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Tributyl phosphate:

Test Type: Skin Sensitization Species: Guinea pig Assessment: Not classified Result: Does not cause skin sensitisation.

Test Type: Skin Sensitization Species: Humans Assessment: Not classified Result: Does not cause skin sensitisation.

Dibutylphenylphosphate:

Test Type: Human experience Species: Humans Assessment: Not classified Result: non-sensitizing

7-Oxabicyclo[4.1.0]heptane-3-carboxylic acid, 2-ethylhexyl ester:

Test Type: Skin Sensitization Species: Guinea pig Result: May cause sensitisation by skin contact.

butylated hydroxytoluene:

Test Type: Skin sensitisation Species: Guinea pig Result: non-sensitizing

Germ cell mutagenicity

Not classified based on available information.

Product:

Genotoxicity in vitro	: Test Type: Salmonella typhimurium assay (Ames test) Metabolic activation: +/- activation Result: negative	
	: Test Type: Mutagenicity - Mammalian Metabolic activation: +/- activation Method: In vitro Mammalian Chromosome Aberration Test Result: negative	
Components:		
Tributyl phosphate: Genotoxicity in vitro	: Test Type: Mutagenicity - Bacterial Metabolic activation: +/- activation Method: Bacterial Reverse Mutation Assay Result: negative	
	: Test Type: Mutagenicity - Mammalian Metabolic activation: +/- activation Method: In vitro Mammalian Chromosome Aberration Test Result: equivocal	
Genotoxicity in vivo	: Species: Rat (Male and Female)	



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			Application Route Method: Mamma Test Result: negative	e: oral: gavage lian Bone Marrow Chromosome Aberration
DibutyIphenyIphosphate: Genotoxicity in vitro			Metabolic activat	onella typhimurium assay (Ames test) ion: +/- activation I Reverse Mutation Assay
			Metabolic activat	genicity - Mammalian ion: +/- activation Mammalian Cell Gene Mutation Test
			Metabolic activat	nosome aberration test in vitro ion: +/- activation Mammalian Chromosome Aberration Test
			Metabolic activat Method: Genetic	genicity - Mammalian ion: - activation Toxicology: DNA Damage and Repair, Un- Synthesis in Mammalian Cells In Vitro
	Genoto	xicity in vivo	: Species: Rat (Ma Application Route Result: negative	ale and Female) e: intraperitoneal injection
	7-Oxab	icyclo[4.1.0]heptane	-3-carboxylic acid, 2-	ethylhexyl ester:
	Genoto	xicity in vitro	Metabolic activat	onella typhimurium assay (Ames test) ion: +/- activation I Reverse Mutation Assay
			Metabolic activat	genicity - Mammalian ion: +/- activation Mammalian Chromosome Aberration Test I
			Metabolic activat	genicity - Mammalian ion: +/- activation Mammalian Cell Gene Mutation Test
	Genoto	xicity in vivo		e: intraperitoneal injection lian Bone Marrow Chromosome Aberration



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	• •						
	Carcinogenicity Suspected of causing cancer.						
	•	onents:					
	Tributy Specie Applica Methoo Remar	yl phosphate: s: Rat, (Male and Fema ation Route: Ingestion d: EPA OTS 798.3300 ks: Limited evidence of ause cancer.		arcinogenic effect.			
	IARC		ec		s product present at levels greater than or ntified as probable, possible or confirmed y IARC.		
	OSHA		ec		s product present at levels greater than or ntified as a carcinogen or potential carcino-		
	NTP		ec		s product present at levels greater than or ntified as a known or anticipated carcinogen		
	Repro	ductive toxicity					
	-	ssified based on availa	ble	information.			
		onents:					
		yl phosphate: on fertility	:	Test Type: Two G Species: Rat Sex: Male and Fe Application Route NOAEL: 225 mg/l Method: EPA OTS	: Ingestion <g,< th=""></g,<>		
	Effects ment	on foetal develop-	:	Species: Rat Application Route 750 mg/kg Method: EPA OTS			
	Effects	Iphenylphosphate: on fertility	:	F2: Lowest obser Method: EPA OTS	e: Ingestion ved adverse effect level 50 mg/kg, ved adverse effect level 50 mg/kg,		
	Effects ment	on foetal develop-	:	Species: Rat Application Route	: oral (gavage)		



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300 mg/kg 3 mg/kg

STOT - single exposure

Not classified based on available information.

Components:

Tributyl phosphate:

Assessment: Based on available data, the classification criteria are not met.

Dibutylphenylphosphate:

Assessment: Not classified

STOT - repeated exposure

Not classified based on available information.

Components:

Tributyl phosphate: Assessment: Based on available data, the classification criteria are not met.

Dibutylphenylphosphate:

Exposure routes: inhalation (dust/mist/fume) Target Organs: Respiratory system Assessment: Not classified

Repeated dose toxicity

Product:

Species: Rat, Male and Female NOAEL: 40 mg/m3 Application Route: Inhalation Exposure time: 28 days Target Organs: Blood, Respiratory system Remarks: Irritating to eyes and respiratory system.

Components:

Tributyl phosphate: Species: Mouse, Male and Female NOEL: 75 mg/kg Application Route: in feed Exposure time: 90 days

Dibutylphenylphosphate:

Species: Rat, Male and Female NOAEL: 5 mg/kg LOAEL: 50 mg/kg Application Route: oral (feed) Exposure time: 90 days

Species: Rat, Male and Female NOAEC: 5 mg/m3 Application Route: Inhalation



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Exposure time: 90 days

Species: Rabbit, Male and Female No observed adverse effect level: 100 mg/kg bw/day Application Route: Dermal Study Exposure time: 21 d

Aspiration toxicity

Not classified based on available information.

Product:

Not applicable

Components:

7-Oxabicyclo[4.1.0]heptane-3-carboxylic acid, 2-ethylhexyl ester: Not applicable

Experience with human exposure

Ρ	r	0	d	u	c	t	:	

Inhalation	:	Remarks: None known.
Skin contact	:	Remarks: Causes skin irritation.
Eye contact	:	Remarks: Contact with the eyes may be very painful but does not cause damage.
Ingestion	:	Remarks: None known.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish	: LC50 (Oncorhynchus mykiss (rainbow trout)): 5.2 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	: LC50 (Daphnia magna (Water flea)): 5.8 mg/l Exposure time: 48 h
Toxicity to algae	: EC50 (Selenastrum capricornutum (green algae)): 8.2 mg/l Exposure time: 96 h
<u>Components:</u> Tributyl phosphate: Toxicity to fish	: LC50 (Oncorhynchus mykiss (rainbow trout)): 4.2 mg/l Exposure time: 96 h
Toxicity to daphnia and other	: EC50 (Daphnia magna (Water flea)): 1.8 mg/l



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aquatic invertebrates		Exposure time: 48 h		
Toxicity to algae		EC50 (Desmodesmus subspicatus (Scenedesmus subspicatus)): 1.1 mg/l Exposure time: 72 h		
Toxicity to fish (Chronic tox- icity)		NOEC (Oncorhynchus mykiss (rainbow trout)): 0.82 mg/l Exposure time: 95 d		
		1.7 mg/l		
Toxicity to daphnia and other aquatic invertebrates (Chron- ic toxicity)		: NOEC (Daphnia magna (Water flea)): 1.3 mg/l Exposure time: 21 d		
Dibutylphenylphosphate: Toxicity to fish		: LL50 (Cyprinus carpio (Carp)): 1.8 mg/l Exposure time: 96 h		
	y to daphnia and other c invertebrates	: EC50 (Daphnia magna (Water flea)): 1.4 mg/l Exposure time: 48 h		
Toxicit	y to algae	: EL50 (Selenastrum capricornutum (green algae)): 9.6 n Exposure time: 72 h Method: EL50 method of the water accommodated frac (W.A.F.)	-	
		NOELR (Selenastrum capricornutum (green algae)): 3.8 Exposure time: 72 h Method: EL50 method of the water accommodated frac (W.A.F.)		
Toxicity to fish (Chronic tox- icity)		: NOEC (Oncorhynchus mykiss (rainbow trout)): > 0.11 m Exposure time: 60 d		
Toxicity to daphnia and other aquatic invertebrates (Chron- ic toxicity)		: NOEC (Daphnia magna (Water flea)): 0.106 mg/l Exposure time: 21 d		
butylated hydroxytoluene: Toxicity to fish		: LC50 (Fish): 0.199 mg/l Exposure time: 96 h		
	y to daphnia and other c invertebrates	: EC50 (Daphnia (water flea)): 0.48 mg/l Exposure time: 48 h		
Toxicity to algae		: EC50 (Chlorella pyrenoidosa (aglae)): 0.758 mg/l Exposure time: 96 h		
Persis	tence and degradabil	у		
<u>Produ</u>	<u>ct:</u>			
Biochemical Oxygen De- mand (BOD)		: Remarks: not determined		



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Chemic (COD)	cal Oxygen Demand	: Remarks: not determined
<u>Components:</u> Tributyl phosphate: Biodegradability		: Result: Readily biodegradable
Dibutylphenylphosphate: Biodegradability		: Method: Ready Biodegradability: Manometric Respirometry Test Remarks: Readily biodegradable
		Method: Ready Biodegradability: Modified MITI Test (I) Remarks: Not readily biodegradable.
	bicyclo[4.1.0]heptane radability	 a-3-carboxylic acid, 2-ethylhexyl ester: Concentration: 100 mg/l Method: Ready Biodegradability: Modified MITI Test (I) Remarks: Readily biodegradable
Bioacc	umulative potential	
	onents: /I phosphate: umulation	: Species: Cyprinus carpio (Carp) Bioconcentration factor (BCF): 20 Exposure time: 56 d Method: OECD Test Guideline 305
		Bioconcentration factor (BCF): 35 Exposure time: 38 d
Partitio octanol	n coefficient: n- /water	: Pow: 10,100
	Iphenylphosphate: umulation	: Species: Cyprinus carpio (Carp) Bioconcentration factor (BCF): 35 Method: OECD Test Guideline 305
	y in soil a available	
Other a	adverse effects	
Produc	<u>::</u>	
	Depletion Potential	:
		Regulation: 40 CFR Protection of Environment; Part 82 Pro- tection of Stratospheric Ozone - CAA Section 602 Class I Substances



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			product neither contains, nor was manufac- ass I or Class II ODS as defined by the U.S.

Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

 Waste from residues
 This product meets the criteria for a synthetic used oil under the U.S. EPA Standards for the Management of Used Oil (40 CFR 279). Those standards govern recycling and disposal in lieu of 40 CFR 260 -272 of the Federal hazardous waste program in states that have adopted these used oil regulations. Consult your attorney or appropriate regulatory official to be sure these standards have been adopted in your state. Recycle or burn in accordance with the applicable standards. Dispose of in accordance with local regulations.

SECTION 14. TRANSPORT INFORMATION

International Regulation

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.

National Regulations

49 CFR

Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

SARA 311/312 Hazards	:	Acute Health Hazard Chronic Health Hazard
SARA 302	:	No chemicals in this material are subject to the reporting re- quirements of SARA Title III, Section 302.
SARA 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.

Clean Air Act

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This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

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

DSL	: All components of this product are on the Canadian DSL
AICS	: On the inventory, or in compliance with the inventory
ENCS	: On the inventory, or in compliance with the inventory
KECI	: Not listed
PICCS	: Not listed
IECSC	: On the inventory, or in compliance with the inventory
TSCA	: On TSCA Inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

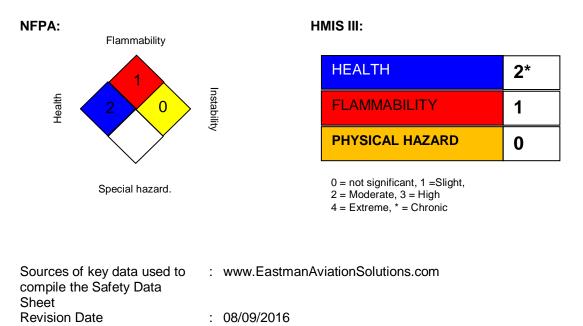
Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; 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



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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; 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



Further information

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 given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.



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