

Hazard classification of substances in oils Hydraulic and Deicing fluids- EU Regulation CLP (2009)
Michaelis, S 2022

Substance name/CAS no.	In oils (O) hydraulic Fluids (H) Deicing fluid (D)	Level in product	Hazard classification - Class/ category code	Hazard statement	concentration limit %	Reaches hazard classification level	Harmonized	Notified	Exp limit (UK) OEL
Tricresyl Phosphate- TCP - 1330-78-5	O	1-5%	REPR 1B/REPR 2; H 360/361	May /Suspected of damaging fertility or the unborn child	0.3 (Repr1B) 3 (Repr2)	✓		✓	NO
			STOT RE 1/ RE2; H 372/ 373- nervous system	May cause damage to organs through prolonged or repeated exposure	1 (RE1) 10 (RE 2)	✓X		✓	
			STOT SE1; H370 (single exp)	Causes damage to organs	1	✓		✓	
			Skin Sens. 1; H317	May cause an allergic skin reaction	1	✓		✓	
			Acute Tox 4; H302, H312	Harmful if swallowed/ in contact with skin	1	✓		✓	
			Eye irrit. 2; H319	Causes serious eye irritation	1	✓		✓	
TCP (meta & para isomers) 78-32-0	O	<3%	Acute Tox 4; H302 / H312	Harmful if swallowed or in contact with skin	1	✓	✓		NO
Tri-o-tolyl phosphate - (ortho isomers of TCP) 78-30-8	O	1.86% (equiv concentra tion)	STOT SE 1; H370 (single exposure)	Damage to organs	1	✓	✓		TOCP (only)
			Skin Sens. 1; H317	May cause an allergic skin reaction	1	✓		✓	
			Muta. 1B; H340	May cause genetic defects	0.1	✓		✓	
			Acute Tox 2, H330	Fatal if inhaled	0.1	✓		✓	
Phenol, dimethyl- phosphate (3:1) - TXP 25155-23-1 (triethyl phosphate)	O	0.1- 1%	REPR 1B; H360F	Substance may damage fertility	0.3	✓	✓		NO
			Eye irrit 2; H319	Causes serious eye irritation	1	✓		✓	
			Skin Sens. 1; H317	May cause an allergic skin reaction	1	✓		✓	
			STOT RE 2; H373 (adrenal, testicular, fertility, reproductive organs, Liver)	May cause damage to organs through prolonged or repeated exposure	10	X		✓	
Phenol isopropylated phosphate (3:1) TIPP/ PIP (3:1) 68937-41-7	O	0-2.5%	Repr. 2; H361	Suspected of damaging fertility or the unborn child	3	X		✓	NO
			STOT RE 2; H373 (adrenal, various, ovary)	May cause damage to organs through prolonged or repeated exposure	10	X		✓	
			Skin Sens. 1; H317	May cause an allergic skin reaction	1	✓		✓	
	H****	10- <20%	Repr. 2; H361	Suspected of damaging fertility or the unborn child	3	✓		✓	
			STOT RE 2; H373 (adrenal, ovary,Kidneys, liver)	May cause damage to organs through prolonged or repeated exposure	10	✓		✓	
			Skin Sens 1B H317	May cause an allergic skin reaction	1	✓		✓	
N-phenyl-1- naphthylamine PAN - 90-30-2	O	1-<2.5%	Acute Tox 4; H302	Harmful if swallowed	1	✓		✓	NO
			Skin Sens.1; H317	May cause an allergic skin reaction	1	✓		✓	
			Skin irritant 2, H315	Causes skin irritation	1	✓		✓	
			Eye irrit. 2, H319	Causes serious eye irritation	1	✓		✓	
			H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled	1	✓		✓	
			STOT SE3: H335	May cause respiratory irritation	20	X		✓	
			STOT RE2; H373 (kidney/blood system/ cardiovascular, STR- (soft tissue rheumatism)	May cause damage to organs through prolonged or repeated exposure	10	X		✓	
			STOT SE 1; H 370(blood)	Causes damage to organs	1	✓		✓	
Alkylated diphenyl amines 68411-46-1	O	1-5%	Eye irrit. 2; H319	Causes serious eye irritation	1	✓		✓	No
			STOT RE 2; H373 (liver)	May cause damage to organs through prolonged or repeated exposure	10	X		✓	
2-naphthylamine BNA 91-59-8 - contaminant of PAN**	O	0.00005%	Acute Tox 4; H302	Harmful if swallowed	1	X	✓		NO
			CARC. 1A, H 350	May cause cancer	0.01	X	✓		

Hazard classification of substances in oils Hydraulic and Deicing fluids- EU Regulation CLP (2009)
Michaelis, S 2022

N-2-naphthylaniline; N-phenyl-2-naphthylamine PBN 135-88-6 Contaminant of PAN**	O	0.005%	Skin Irrit. 2; H315	Causes skin irritation	1	X	✓		NO
			Eye irritant; H319	Causes serious eye irritation	1	X	✓		
			Skin Sens.; H317	May cause an allergic skin reaction	1	X	✓		
			Carc. 2, H351	Suspected of causing cancer	1	X	✓		
Proprietary' base stock additives - Synthetic esters in mix C5-C10 fatty acid esters of pentaerythritol and dipentaerythritol	O	95%	Skin Corr 1B, H314	causes severe skin burns and eye damage	1	✓		✓	
			Eye dam 1, H318	causes serious eye damage	1	✓		✓	
			STOT SE3; H335 respiratory tract (inhal)	May cause respiratory irritation	20%	✓		✓	
Tributyl phosphate– TBP 126-73-8	H	20-80%	Carc. 2, H351	Suspected of causing cancer	1	✓	✓		YES
			Acute Tox 4; H302	Harmful if swallowed	1	✓	✓		
			irrit 2; H315	Causes skin irritation	1	✓	✓		
			STOT RE 2; H373 (liver, urinary)	May cause damage to organs through prolonged or repeated exposure	10	✓		✓	
Triphenyl phosphate*** –TPP 115-86-6	H	1-2.5%	Eye irrit. 2; H319	Causes serious eye irritation	1	✓		✓	YES
Dibutyl phenyl phosphate 2528-36-1	H	20-30%	Acute Tox 4; H312	Harmful in contact with skin	1	✓		✓	NO
			Skin Irrit. 2; H315	Causes skin irritation	1	✓		✓	
			Eye irrit. 2; H319	Causes serious eye irritation	1	✓		✓	
			Acute Tox. 4, H332	Harmful if inhaled	1	✓		✓	
			STOT SE3; H335 (Respir)	May cause respiratory irritation	20	✓		✓	
butyl diphenyl phosphate 2752-95-6	H	5-10%							NO
2,6-di-tert-butyl-p- cresol 128-37-0	H	1-5%	Acute Tox 4; H312	Harmful in contact with skin	1	✓		✓	YES
			H311	Toxic in contact with skin	0.1	✓		✓	
			Skin Irrit. 2; H315	Causes skin irritation	1	✓		✓	
			Eye irrit. 2; H319	Causes serious eye irritation	1	✓		✓	
			Acute Tox. 4, H332	Harmful if inhaled	1	✓		✓	
			H331	Toxic if inhaled	0.1	✓		✓	
			STOT SE3; H335 (Respir, lungs)	May cause respiratory irritation	20	X		✓	
			STOT RE 2; H373 (lung,liver,throat)	May cause damage to organs through prolonged or repeated exposure	10	X		✓	
			Skin Sens.1; H317	May cause an allergic skin reaction	1	✓		✓	
			STOT SE 1; H370 (nervous system/throat)	causes damage to organs	1	✓		✓	
			Muta. 1B; H340	May cause genetic defects	0.1	✓		✓	
			Muta 2; H340	Suspected of causing genetic defects	1	✓		✓	
			Carc 2; H351	Suspected of causing cancer	1	✓		✓	
			REPR 2; H361	Suspected of damaging fertility or the unborn child	3	✓		✓	
2-ethylhexyl 7- oxabicyclo[4.1.0] heptane-3- carboxylate or Aliphatisches Epoxide 62256-00-2	H	</10%	Skin Sens. 1; H317	May cause an allergic skin reaction	1	✓		✓	NO
			Eye Irrit. 2; H319	Causes serious eye irritation	1	✓		✓	
			Skin Irrit. 2; H315	Causes skin irritation	1	✓		✓	

Hazard classification of substances in oils Hydraulic and Deicing fluids- EU Regulation CLP (2009)
Michaelis, S 2022

CALCIUM SULPHONATE 57855-77-3	H	0.1-1%	Skin Irrit. 2: H315	Causes skin irritation	1	✓		✓	NO
			Skin Sens. 1; H317	May cause an allergic skin reaction	1	✓		✓	
			Eye Irrit. 2; H319	Causes serious eye irritation	1	✓		✓	
			Resp. Sens. 1; H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled	1	✓		✓	
			Eye Dam. 1;H318	Causes serious eye damage	1	✓		✓	
Ethylene glycol 107-21-1	D	92%	STOT RE 2; H373 (kidney, liver, urinary)	May cause damage to organs through prolonged or repeated exposure	10	✓		✓	YES
			Acute Tox 4; H302	Harmful if swallowed	1	✓	✓		
			STOT SE3; H336 (CNS)	May cause drowsiness, dizziness	20	✓		✓	
			Skin Irrit. 2: H315	Causes skin irritation	1	✓		✓	
			Muta. 1B; H340	May cause genetic defects	0.1	✓		✓	
			Repr. 1B; H360	May damage fertility or the unborn child	0.3	✓		✓	
			STOT SE 1; H370 (systemic)	causes damage to organs	10	✓		✓	
			STOT RE1; H372 (heart, CNS, respiratory, systemic)	Causes damage to organs through prolonged or repeated exposure	10	✓		✓	
propylene glycol 57-55-6	D	55%	Eye Irrit. 2; H319	Causes serious eye irritation	1	✓		✓	NO
			Skin Irrit. 2: H315	Causes skin irritation	1	✓		✓	
			STOT SE3; H335	May cause respiratory irritation	20	✓		✓	
			STOT SE3; H336 (Nervous system - inhal)	May cause drowsiness, dizziness	20	✓		✓	
			Skin Sens. 1; H317	May cause an allergic skin reaction	1	✓		✓	
Notes BOLD TEXT in columns D,E = Harmonized at EU level * Additive used in TurboNycoil600 ** reference: Mobil Aust Senate 1999 *** May be in TurboNycoil600 ****-. Used in selected newer hydraulic fluids. Others up to <10%									