

Human Health and Environmental Fact Sheet

Disclaimer: The information presented in this fact sheet was compiled from information from flame retardants manufacturers and public data sources. The authors cannot be held liable for factual errors. For latest information on substance testing, classification and labelling as well as regulatory status please contact the individual manufacturers and refer to their latest safety data sheet applicable in your country or region.

Product name	Diethylphosphinic acid, aluminium salt	
Synonyms	DEPAL, Exolit OP 1230, Exolit OP 930, Exolit OP 935 (R)	
CAS no.	225789-38-8	
Molecular Structure		
Mw	390.3 g/mole	
Mf	[C ₄ H ₁₀ PO ₂] ₃ Al	
Physical form	White powder	
Use	Flame retardant for polyamides, polyesters, thermoset resins (e.g. epoxies)	
PBT/vPvB EVALUATION		
	Conclusion	Comments
Persistent or very Persistent	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	DEPAL is not readily biodegradable
Bioaccumulative or very bioaccumulative	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Ecotoxicity	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
HUMAN HEALTH		
	Result	Comments
Acute toxicity		
Acute toxicity (LD ₅₀)	>2000 mg/kg bw	Test standard: OECD 401
Eye irritation	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Test standard: OECD 405 (rabbit)
Skin irritation	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Test standard: OECD 404 (rabbit)
Sensitization / Potentially allergenic	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Test according to OECD 429 <input type="checkbox"/> or OECD 406 <input checked="" type="checkbox"/> .
Potentially mutagenic	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Test according to OECD 471
Chronic toxicity		
Carcinogenicity (NOAEL)	No data	Test standard:
Reprotoxicity (NOAEL)	No data	Test standard: OECD 416
Genotoxicity	Yes <input type="checkbox"/> No <input type="checkbox"/>	Not tested for
Endocrine disruption	Yes <input type="checkbox"/> No <input type="checkbox"/>	Not tested for

ENVIRONMENT		
Degradation		
Half life in water (fresh or marine)	No data	Test standard: OECD 301
Half life in sediment (fresh or marine)	No data	Test standard:
Half life in soil	No data	Test standard:
Readily biodegradable	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Test standard: OECD 301
Inherently biodegradable	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Test standard: OECD 301 prolonged CBT
Sewage treatment removal	No data %	Test standard:
Bioaccumulation		
BCF (log)	No data	Species: Test standard: Bioconcentration unlikely due to low pK_{ow}
Log K_{ow}	-0.44	Estimated; very low because of ionic nature of substance; Test standard (OECD 107), 92/69/EEC, appendix A.8 not applicable
Eco-toxicity		
toxicity for fish	LC0 = 100 mg/L (96 h)	Species: Danio rerio Test standard: OECD 203
toxicity for invertebrate	EC0 = 100 mg/L (48 h)	Species: Daphina magna Test standard: OECD 202
Reprotox, invertebrate	NOEC = 10 mg/L	Species: Daphina magna Test standard: OECD 211
Chronic toxicity for algae,	NOEC = 2.2 mg/L (72 h) $E_bC_{50} = 60$ mg/L $E_rC_{50} = 76$ mg/L NOEC = 180 mg/L (72 h, for pH adjusted control)	Species: Scenedesmus subspicatus Test standard: EEC-Guideline 92/69 No. L383 C.3.
Physical properties		
Vapour pressure at 25 °C	not applicable (salt) at 20 deg. C	Test standard: OECD 104
Solubility in water at 25 °C	< 1000 mg/L	Test standard: 92/69/EEC, A.6. for neat substance; if substance is created in situ by precipitation, solubility can be up to 2.5 g / L
Soil Adsorption coefficient, K_{oc}	No data	Test standard:
Henry's law constant (atm·m ³ /mole)	No data	Test standard
Hydrolysis (half life) in water	No data	Test standard: OECD 111

RISK PHRASES		
	Applies following Directive EC/67/548	Comments
R40	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Tested for this endpoint
R42	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
R43	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Tested for this endpoint
R45	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
R49	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
R50	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Tested for this endpoint
R53	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Tested for this endpoint

More information:

www.exolit.com (Clariant website)