

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	APYMAG	
Synonyms	Magnesium Hydroxide, Brucite	
CAS no.	1309-42-8	
Molecular Structure	HO–Mg–OH	
Mw	58.32 g/mole	
Mf		
Physical form	solid	
Use	Flame retardant, additive	
PBT/vPvB EVALUATION		
	Conclusion	Comments
Persistent or very Persistent	Yes No x	Not applicable for inorganic substance
Bioaccumulative or very bioaccumulative	Yes No x	Magnesium hydroxide is not expected to be bioaccumulative
Ecotoxicity	Yes No x	The low water solubility indicates that Magnesium hydroxide will be relatively immobile in the environment. Magnesium hydroxide is a mineral found naturally in the environment.
HUMAN HEALTH		
	Result	Comments
Acute toxicity		Magnesium hydroxide is categorized by the U.S. Food and Drug Administration (FDA) as a Generally Recognized As Safe (GRAS) food ingredient.
Acute toxicity (LD ₅₀)	5800 mg/kg bw	Test standard:OECD 401.....
Eye irritation	Yes No	No data available
Skin irritation	Yes No	No data available
Sensitization	Yes No	Magnesium hydroxide is not estimated to cause skin sensitization based on professional judgment.
Chronic toxicity		
Carcinogenicity (NOAEL)	no significant differences in tumor incidence between treated and control animals	96-week chronic toxicity/carcinogenicity study on MgCl ₂ , oral, mouse Experimental studies and structure-activity

		relationships indicate that Magnesium hydroxide is of low concern for carcinogenicity.
Reprotoxicity (NOAEL)	No reproducztive effects NOAEL > 96 mg/kg/day for Mg ²⁺ ion.	Secondary source, study details and test conditions were not provided. Based on weight of evidence from a nonstandard experimental study Magnesium hydroxide is expected to be of low concern for reproductive effects
Genotoxicity	Yes No x	Ames test
Endocrine disruption	Yes No	No data available

ENVIRONMENT		
Degradation		As a fully oxidized inorganic material, Magnesium hydroxide is not expected to biodegrade, oxidize in air, or undergo hydrolysis under environmental conditions.
Half life in water (fresh or marine)	days	Not applicable
Half life in sediment (fresh or marine)	days	Not applicable
Half life in soil	days	Not applicable
Readily biodegradable	Yes No	Not applicable
Inherently biodegradable	Yes No	Not applicable
Sewage treatment removal	%	Not applicable
Bioaccumulation		Magnesium hydroxide is not expected to be bioaccumulative.
BCF (log)		Not applicable
Log K _{ow}		Not applicable
Eco-toxicity		Because of the very low water solubility Magnesium hydroxide is not expected to be eco-toxic
Chronic toxicity for fish, NOEC	>100 mg/liter	Secondary source
Chronic toxicity for invertebrate, NOEC	>100 mg/liter	Secondary source
Chronic toxicity for algae, NOEC	>100 mg/liter	Secondary source
Physical properties		
Vapour pressure at 25 °C	at 20 deg. C	Not applicable
Solubility in water at 25 °C	0,001 – 0,008 mg/liter	IUCLID 2000
Soil Adsorption coefficient, K _{oc}		Not applicable
Henry's law constant (atm-		Not applicable

m ³ /mole)		
Hydrolysis (half life) in water	days	Not applicable
RISK PHRASES		
	Applies following Directive EC/67/548	Comments
R40	Yes No x	
R42	Yes No x	
R43	Yes No x	
R45	Yes No x	
R49	Yes No x	
R50	Yes No x	
R53	Yes No x	

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