hafnium lead trioxide

IDENTIFICATION NUMBERS

- **CAS:** 12029-23-1
- **EC/EINECS:** 234-735-5

MORE INFORMATION

- **Molecular Formula:** HfO3Pb
- **Synonyms:** TRIOXIDO DE PLOMO Y HAFNIO

⚠ **Black list — Substances particularly hazardous to the environment or health**

CLASSIFICATION AND LABELLING (Regulation 1272/2008)

Symbols



GHS07

Acute toxicity (oral, dermal, inhalation



GHS08

Respiratory sensitisation



GHS09

Hazardous to the aquatic environment

Signal word: Danger

H Phrases

H332 : Harmful if inhaled

Acute Tox. (Cat. 4 *) : Acute toxicity

H302 : Harmful if swallowed

Acute Tox. (Cat. 4 *) : Acute toxicity

H400 : Very toxic to aquatic life

Aquatic Acute (Cat. 1) : Hazardous to the aquatic environment

H410 : Very toxic to aquatic life with long lasting effects

Aquatic Chronic (Cat. 1) : Hazardous to the aquatic environment

H373 : May cause damage to organs through prolonged or repeated exposure

STOT RE (Cat. 2 *) : Specific target organ toxicity - repeated exposure

H360Df : May damage the unborn child. Suspected of damaging fertility.

Repr. (Cat. 1A) : Reproductive toxicity

Nota A.Nota 1.

Notes

- R.1272-Note A
- R.1272-Note 1

Labelling

Concentration	Labelling
C >= 25 %:	T, N; R61-20/22-33-62-50/53
5% <= C < 25 %:	T, N; R61-20/22-33-62-51/53
2,5 % <= C < 5 %:	T, N; R61-20/22-33-62-51/53
1% <= C < 2,5 %:	T; R61-20/22-33-52/53
0,5 % <= C < 1 %:	T; R61-33-52/53
0,25 % <= C < 0,5 %:	R52/53
C >= 2,5 %	Repr., 2; H361f
	*
C >= 0,5 %	STOT repe., 2; H373

Specific health risks

Neurotoxic substances

Substances with neurotoxic effects

NEUROTOXIC EFFECT	LEVEL
SNC	4

SOURCE

14

According to IARC

Substances classified as carcinogens or mutagens Category 2 under the CLP Regulation (GHS), bearing H351 and/or H341 phrases. These are substances suspected of causing cancer or heritable genetic mutations in humans.

IARC GROUP	IARC VOLUME
Grupo 2A	(VOL. 87; EN PREPARACIÓN)

Occupational Exposure Limits (OEL)

Daily exposure limit values (VLA-ED) published by the Spanish National Institute of Safety and Health at Work (INSST). They represent the average concentration of a chemical agent in the worker's breathing zone, measured or calculated in a time-weighted manner for an 8-hour daily working period. (https://www.insst.es/valores-limites-de-exposicion)

OCCUPATIONAL EXPOSURE LIMITS

State / Form	TWA (ppm)	TWA (mg/m³)	STEL (ppm)	STEL (mg/m³)	Notes
—	—	0.15	—	—	k, VLB, TR1

Prohibited for pregnant workers

Substances prohibited for pregnant workers

Reproductive toxicants

Substances classified as toxic for reproduction under Regulation 1272/2008

Specific environmental risks

Aquatic toxicity (Water Framework Directive)

Substances classified with acute aquatic toxicity under the CLP Regulation (H400 phrase, Aquatic Acute 1). They present an immediate hazard to aquatic organisms, and their use or discharge can cause rapid damage to aquatic ecosystems.

Environmental regulations

LPCIC (EPER)

Priority substances and specific pollutants within the EU water policy framework, established by the Water Framework Directive (2000/60/EC) and the Priority Substances Directive (2008/105/EC and amendments). Substances posing significant risk to European surface waters and subject to Environmental Quality Standards (EQS).

EPER WATER	EPER AIR
1	1

EPER Water

Substances from List 1 of Annex III of the IPPC Directive (integrated into the Industrial Emissions Directive 2010/75/EU). Atmospheric pollutants —including SO_2, NOx, heavy metals and organic compounds— that must be taken into account when setting emission limit values for IPPC installations.

EPER Air

Substances from List 2 of Annex III of the IPPC Directive (integrated into the Industrial Emissions Directive 2010/75/EU). Pollutants that may affect surface and groundwater bodies and must be considered in the integrated environmental authorisation of industrial installations.

Restriction/prohibition regulations

Restricted substances under REACH

Substances listed in Annex XVII of the REACH Regulation (EC) No 1907/2006, subject to restrictions on their manufacture, placing on the market or use. Restrictions may be total or partial, limiting specific applications, maximum concentrations or user groups.

NOTES

Limitations: Without prejudice to the other parts of this Annex the following shall apply to entries 28 to 30: 1. Shall not be placed on the market, or used, - as substances, - as constituents of other substances, or, - in mixtures, for supply to the general public when the individual concentration in the substance or mixture is equal to or greater than: - either the relevant specific concentration limit specified in Part 3 of Annex VI to Regulation (EC) No 1272/2008, or, - the relevant concentration specified in Directive 1999/45/EC where no specific concentration limit is set out in Part 3 of Annex VI to Regulation (EC) No 1272/2008. Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of substances and mixtures, suppliers shall ensure before the placing on the market that the packaging of such substances and mixtures is marked visibly, legibly and indelibly as follows: ‘Restricted to professional users’. 2. By way of derogation, paragraph 1 shall not apply to: (a) medicinal or veterinary products as defined by Directive 2001/82/EC and Directive 2001/83/ EC; (b) cosmetic products as defined by Directive 76/ 768/EEC; (c) the following fuels and oil products: - motor fuels which are covered by Directive 98/70/EC, - mineral oil products intended for use as fuel in mobile or fixed combustion plants, - fuels sold in closed systems (e.g. liquid gas bottles); (d) artists’ paints covered by Directive 1999/45/ EC; (e) the substances listed in Appendix 11, column 1, for the applications or uses listed in Appendix 11, column 2. Where a date is specified in column 2 of Appendix 11, the derogation shall apply until the said date. Source: Regulation 1907/2006 (REACH). Annex XVII

Major accident hazards (Seveso)

Hazardous substances listed in Annex I of the Seveso III Directive (Directive 2012/18/EU), transposed in Spain by Royal Decree 840/2015. Their presence in industrial establishments in quantities equal to or above established thresholds triggers obligations to implement major accident risk control measures.

Substances under PACT evaluation

Substances under active regulatory monitoring through ECHA's PACT (Public Activities Coordination Tool). Allows tracking which regulatory authorities are examining a substance and what potential regulatory actions are being considered (restriction, SVHC identification, harmonised classification, etc.).