

## TC NES SUBGROUP ON IDENTIFICATION OF PBT AND VPVB SUBSTANCES

### RESULTS OF THE EVALUATION OF THE PBT/VPVB PROPERTIES OF:

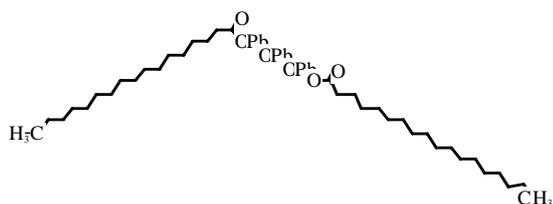
**Substance name:** Dioxobis(stearato)trilead

**EC number:** 235-702-8

**CAS number:** 12578-12-0

**Molecular formula:** C<sub>36</sub>H<sub>70</sub>O<sub>6</sub>Pb<sub>3</sub>

**Structural formula:**



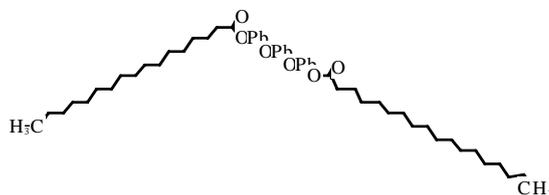
#### Summary of the evaluation:

Dioxobis(stearato)trilead is not considered to be a PBT substance. It does not meet the screening P criterion and it is likely to not meet the B criterion. T criterion is fulfilled for human health. The conclusion was partly based on data of a structurally similar substance, lead distearate (CAS 1072-35-1).

## JUSTIFICATION

### 1 IDENTIFICATION OF THE SUBSTANCE AND PHYSICAL AND CHEMICAL PROPERTIES

Name: Dioxobis(stearato)trilead  
 EC Number: 235-702-8  
 CAS Number: 12578-12-0  
 IUPAC Name:  
 Molecular Formula: C<sub>36</sub>H<sub>70</sub>O<sub>6</sub>Pb<sub>3</sub>  
 Structural Formula:



Molecular Weight: 1220.56  
 Synonyms: Dibasic lead stearate; stearic acid, lead salt, dibasic; lead oxide stearate

#### 1.1 PURITY/IMPURITIES/ADDITIVES

No data available.

#### 1.2 PHYSICO-CHEMICAL PROPERTIES

Table 1 Summary of physico-chemical properties. For references, see European Commission (2000)

REACH ref Annex, §	Property	Value	Comments
V, 5.1	Physical state at 20 C and 101.3 Kpa	solid	European Commission (2000)
V, 5.2	Melting / freezing point	>250°C	Ackros data (data not evaluated)
V, 5.3	Boiling point		
V, 5.5	Vapour pressure		
V, 5.7	Water solubility	8.6 · 10 <sup>-15</sup> mg l <sup>-1</sup> (at 25°C) 0.025 g l <sup>-1</sup> (at 50°C)	WSKOW v1.41 using logKow of 14.12 Ackros information (data not evaluated)
V, 5.8	Partition coefficient n-octanol /water (log value)	14.12 (calculated)	KOWWIN v1.67
VII, 5.19	Dissociation constant	-	-

## 2 MANUFACTURE AND USES

Six companies have provided data under Regulation 93/793/EEC on the substance. European Commission (2000) reports the use as stabiliser.

## 3 CLASSIFICATION AND LABELLING

The substance belongs to the group of lead compounds which are classified in the Annex I of Directive 67/548/EEC:

### CLASSIFICATION

Repr. Cat 1; R61	May cause harm to the unborn child.
Repr. Cat 3; R62	Possible risk of impaired fertility.
Xn; R20/22	Harmful by inhalation and if swallowed.
R33	Danger of cumulative effects
N; R50/53	Very toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment

## 4 ENVIRONMENTAL FATE PROPERTIES

### 4.1 DEGRADATION (P)

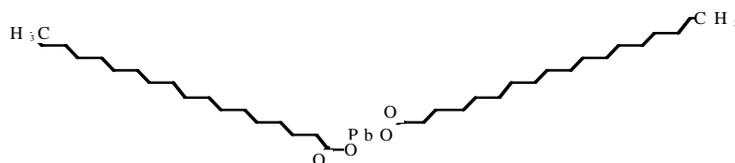
#### 4.1.1 Abiotic degradation

Indirect photochemical degradation in the atmosphere is considered to be fast based on the estimated half-life of 9.0 hours for the reaction with OH-radicals using AOP v1.91 ( $24 \text{ h day}^{-1}$ ;  $5 \cdot 10^5 \text{ OH}^- \text{ cm}^{-3}$ ).

#### 4.1.2 Biotic degradation

No standard biodegradation studies are available. BIOWIN v4.02 predicts that the substance is not readily biodegradable.

It is considered that degradation of dioxobis(stearato)trilead occurs in a similar manner as degradation of structurally similar substance lead distearate (CAS 1072-35-1; see structure below)



Biodegradation of lead distearate (CAS 1072-35-1) was studied according to OECD 301F by RWTÜV Anlagentechnik GmbH (1997). Test substance concentration was 100 mg l<sup>-1</sup> (metal content 27.25%). Test temperature was 20°C. After 28 days 73% biodegradation was observed, after 35 days 87% was degraded (measured as BOD/ThOD). The 10-day window criterion was not achieved. The test substance was not found to be toxic to the inoculum. The study is considered valid and lead distearate is concluded to be readily biodegradable. Assuming similar biodegradation behaviour for dioxobis(stearato)trilead, it is considered to be readily biodegradable.

#### 4.1.3 Other information <sup>1</sup>

Data not available.

#### 4.1.4 Summary and discussion of persistence

Dioxobis(stearato)trilead is considered to degrade fast in the atmosphere. No experimental degradation data on dioxobis(stearato)trilead are available. The structurally similar substance lead distearate (CAS 1072-35-1) is according to a standard OECD 301F study readily biodegradable, failing the 10 day window. Assuming a similar biodegradation behaviour, dioxobis(stearato)trilead is also expected to be readily biodegradable, failing the 10 day window.

### 4.2 ENVIRONMENTAL DISTRIBUTION

Data not reviewed for this report.

#### 4.2.1 Adsorption

#### 4.2.2 Volatilisation

#### 4.2.3 Long-range environmental transport

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<sup>1</sup> For example, half life from field studies or monitoring data

### **4.3 BIOACCUMULATION (B)**

#### **4.3.1 Screening data<sup>2</sup>**

The substance has a very high molecular weight (1220 g mol<sup>-1</sup>) and it is therefore not expected that bioaccumulation would occur. BCFWIN v 2.15 predicts a BCF of 3.2 using the logKow of 14.12.

#### **4.3.2 Measured bioaccumulation data<sup>3</sup>**

No measured data are available for dioxobis(stearato)trilead.

#### **4.3.3 Other supporting information<sup>4</sup>**

Data not reviewed for this report.

#### **4.3.4 Summary and discussion of bioaccumulation**

No experimental data are available on bioaccumulation of dioxobis(stearato)trilead. Due to the large molecule size, the substance is not expected to bioaccumulate. The available QSAR prediction supports the assumption.

## **5 HUMAN HEALTH HAZARD ASSESSMENT**

Data not reviewed for this report.

## **6 ENVIRONMENTAL HAZARD ASSESSMENT**

No ecotoxicity data are available for this substance.

### **6.1 AQUATIC COMPARTMENT (INCLUDING SEDIMENT)**

#### **6.1.1 Toxicity test results**

##### **6.1.1.1 Fish**

Acute toxicity

Long-term toxicity

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<sup>2</sup> For example, log K<sub>ow</sub> values, predicted BCFs

<sup>3</sup> For example, fish bioconcentration factor

<sup>4</sup> For example, measured concentrations in biota

### **6.1.1.2 Aquatic invertebrates**

Acute toxicity

Long-term toxicity

### **6.1.1.3 Algae and aquatic plants**

### **6.1.2 Sediment organisms**

### **6.1.3 Other aquatic organisms**

## **6.2 TERRESTRIAL COMPARTMENT**

## **6.3 ATMOSPHERIC COMPARTMENT**

# **7 PBT AND VPVB**

## **7.1 PBT, VPVB ASSESSMENT**

**Persistence:** Dioxobis(stearato)trilead does not fulfil the screening P/vP criteria. The substance is expected to be readily biodegradable based on biodegradation data of the structurally similar substance lead distearate (CAS 1072-35-1).

**Bioaccumulation:** The substance does likely not fulfil the B criterion. No experimental bioaccumulation data are available but based on the size of the molecule it is expected that no bioaccumulation occurs.

**Toxicity:** The substance fulfils the T criterion for human health. Lead compounds are classified as toxic to reproduction in category 1 (R61) and in category 3 (R62). No experimental ecotoxicity data are available for dioxobis(stearato)trilead.

**Summary:** Dioxobis(stearato)trilead does not meet the screening P/vP criteria. B criterion is probably not fulfilled. T criterion is fulfilled for human health. It is concluded that the substance is not considered as a PBT substance. The conclusion was partly based on data of the structurally similar substance lead distearate (CAS 1072-35-1).

## INFORMATION ON USE AND EXPOSURE

Not relevant as the substance is not identified as a PBT.

## OTHER INFORMATION

The information and references used in this report were mainly taken from the following source:

European Commission (2000) IUCLID Dataset, dioxobis(stearato)trilead, CAS 12578-12-0, 18.2.2000.

Other sources:

RWTÜV Anlagentechnik GmbH (1997) Bestimmung der leichten biologischen Abbaubarkeit der Prüfsubstanz Bleistearat – Manometrischer Respirationstest (OECD 301 F). Contract no. 716085/01, 27.11.1997.