

**EU COM Study to support the review of the list of restricted substances and to assess a new
exemption request under RoHS 2 (Pack 15)**

**1st Stakeholder Consultation
Questionnaire for diantimony trioxide (CAS 1309-64-4; EC 215-175-0)**

EDG-ESGA submission

1. Applications in which Sb₂O₃ is in use

**a. Products and applications relevant to electric/electronic equipment? Is substitution
under way ? What are possible alternatives ?**

- Sb₂O₃ is used as an intermediate in the synthesis of certain glasses to provide specific characteristics. Its function is to provide a specific glass with enhanced transparency by oxidizing the Fe ions and thus prevents the color of Fe+2 ions and reduces amount of Fe+2 and increases the solar and light transmission, improving photon transmission. The adding of Sb₂O₃ in the glass ingredients brings indispensable effects on the molten glasses for optical transmission, turbidity and bubbles removal. It is also used to produce special glass inhibiting the reduction of solarisation effects.
- Those glasses are used for add watches, consumer equipment, small household appliances, jewellery, tableware, luminaires, furniture, optical glass in cameras, photocopies, binoculars, fluorescent light tubes (where Sb ions allow visible light), glass solders, pharmaceutical glass, flashed glass, filter glass.
Optical systems provide key functions for research, diagnosis, surveillance and quality assurance in medicine, scientific research, general industry, safety installations, environment monitoring and a vast amount of other applications. For example, with leading edge microscopes, progress in medicine and microbiology is impossible. All industry relies on the function of high end optical systems : automotive, aviation, ship building industry, road and building construction, even food industry need optical measurement equipment of quality inspection and for machine alignment.
A reduced light transmission would mean a reduced performance and a loss of competitiveness on those products manufactured in Europe.
- **The alternatives could be**
 - There is no alternative providing the same required functions.

**b. Are glass products/applications made with Sb₂O₃ recycled and what is the Sb₂O₃
content?**

In BtoB, special glass is recycled.

There is no Sb₂O₃ content in any glass application : the Sb₂O₃ is completely transformed in the melting process, and only Sb ions are present, bound in the glass matrix. As a matter of fact, only ions are bound in the glass matrix.

**c. In which applications is it used as additive / intermediate and what is the content of
Sb₂O₃ in the final product ?**

In glass, Sb₂O₃ is only used as an intermediate.

There is no Sb₂O₃ content in any glass application : only Sb ions are present, bound in the glass matrix.

2. Quantities and range in which Sb₂O₃ is in use

a. Details of applications and volume of use per application (to provide a range is possible)

About 200 tonnes of Sb₂O₃ for the whole European glass sector (domestic + special glass)

b. What is the current trend in substitution ?

There is no possibility for substitution. Extensive research was carried out and outcome was that no other oxide provide the same functions brought by Sb₂O₃.

3. Potential emissions in the waste stream

a. For applications containing Sb₂O₃, detail how it is managed in the waste phase

Since Sb₂O₃ is not present in the final product (glass), there is no need to take it into account in the waste phase.

b. How are waste glass containing Sb₂O₃ dealt with in the waste phase ?

There is no Sb₂O₃ in the final glass product

c. Emissions during treatment processes ?

There is no Sb₂O₃ emissions stemming from any cold treatment process.

4. Substitution

a. Is substitution scientifically or technically not practicable or reliable and why ?

Substitution is not reliable because considered alternative substances result in severe alterations in the final product (strong color tint, lesser light transmission etc.)

b. Alternatives ?

There exists no other alternative.

c. Constraints to substitution (costs, reliability, etc. ?)

Reliability (see point 4.a)

5. Socio-economic impact of a possible restriction

Given that Sb₂O₃ is not present in the article, the obligation to request an exemption every five years, would be meaningless, burdensome, costly and would generate business uncertainty, thereby delaying investments.

6. Further information

There is no point in glass being in the scope of the RoHS with regard to Sb₂O₃, since this substance is used as an intermediate in all cases, and is not present in the final glass. The domestic glass industry and the special glass industry therefore suggest that glass specifically be excluded from the scope of the RoHS with regard to Sb₂O₃, OR be granted a permanent exemption.

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