



LYNRED

RESTRICTED



From : LYNRED

To : OKO-INSTITUTE

Subject : Comments on Indium Phosphide, in relation to the Substance Review and possible amendment of the RoHS Annex II list of restricted substances

Applications and quantities

- InP is used in the manufacturing process of InGaAs infrared detectors. The sub-part called infrared detection circuit is made of 98% of InP at the initiation of the process. The detection circuit is later hybridized to a Silicon integrated circuit. The hybrids are then hermetically sealed in a dedicated packaging for the full duration of the product life cycle. There is therefore no direct exposure for the user nor for the environment.
- Up to 7% mass of the packaged detectors is made of InP.
- In one year, the total mass of InP processed at Lynred is less than 2,5 kg and less than 150 g can finally be found in final products.
- Infrared detectors are considered as EEE for industrial applications.

Potential emissions in the waste stream and in manufacturing process

- During the manufacturing process, protection measures are implemented so that no employees are in direct contact with InP (e.g., employees are wearing gloves and personal protective equipment during manipulation and chemical treatments, all treatments are performed at room temperature). All operations at higher temperature are realized in confined and/or vacuum equipment, so there is no risk of exposure to fumes.
- Liquid effluents issued from etching, thinning and cutting operations are containing traces of InP. They are mixed with acidic effluents and treated as hazardous waste.
- After the end of life, a channel for collection and treatment of the products is available. The products collected are treated as hazardous waste.

Socio economic impact of a possible restriction

- InGaAs infrared detectors are essential to innovation in industrial control, scientific and surveillance applications.
- This range of infrared detectors constitutes a significant part of the company turnover, which should be increased in the few next years.
- 40 jobs are full or partially directly concerned by InP-based activities (excluding subcontractors and suppliers).

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