

# Octyltin Compounds

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LANXESS Solutions US Inc. is a global partner for the manufacturing, marketing and development of specialty organometallic products. These products are used in polymer production, the synthesis of fine chemicals and pharmaceuticals, and in processes for the fabrication of semiconductor devices and photovoltaic modules.

## Identification

- AXION<sup>®</sup> CS 1830 / 2830 / 2851 / 4800
  - AXION PS 3830
- |  | CAS# |
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## Description

Octyltin compounds are used as intermediates in the production of polymer stabilizers (PVC heat stabilizers), as reagent in organic synthesis, as well as catalysts in esterification, trans-esterification and as curing agents for urethanes and silicones and in cataphoresis coating. As such they are neither visible nor present in the final product, as they are transformed into other materials or destroyed during production.

## Physical/Chemical Properties:

Dioctyltin compounds share the characteristic element of a central tin atom carrying one to four octyl groups. As tin is capable of forming four direct bonds to other groups or elements, said octyl groups are typically supplemented by either chloride or oxygen. Such compounds are solid (powder) or liquid, and their color varies from white or clear to brown. Octyltin compounds are difficult to ignite, almost insoluble in natural water and substantially non-volatile. They may cause acute or chronic health hazards but are usually less harmful to the environment compared to related butyltin compounds. For this reason, they may only be handled by trained, properly protected and equipped workers in appropriate industrial settings.

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### Health Effects:

Octyltin compounds are harmful or toxic when swallowed, depending on their nature. They also cause skin irritation or allergic reactions, as well as severe damage to the eyes. Octyltin compounds should be avoided by pregnant women or those who want to become pregnant due to their potential to affect fertility or cause damage to the fetus. In addition, some compounds are suspected of causing genetic defects or cancer.

### Potential Environmental Impact

The toxic intensity level of octyltins varies from harmful to very toxic to aquatic organisms, and they may cause long-term adverse effects in the aquatic environment. Non-biological, as well as biodegradation of octyltin compounds, is low; therefore, they may affect aquatic as well as non-aquatic compartments over longer time periods once brought in.

### Release Control and Disposal:

Spill and leak control measures are taken during both manufacturing, storage, and handling as well as during transportation. Contaminated material must be classified and labelled prior to recycling or disposal. Octyltin must be disposed of by incineration in accordance with local regulations.

### Product Stewardship:

LANXESS SOLUTIONS US INC. conducts ongoing analysis of its products to identify and evaluate potential risk areas throughout product's life cycle. Chemical risks are identified at the very beginning of new product development. They are evaluated by stage-gated reviews using environmental, health and safety (EHS) criteria. Analysis of existing products will evaluate raw materials, manufacturing, transportation customer end-use and disposal. Additionally, before changes in existing product formulations are made, a detailed evaluation of proposed changes is conducted. A crucial component of all these processes is the Safety Data Sheet, which is a compilation of detailed product hazard information.

Potential product risks identified are reviewed according to current controls. In the context of a continually improving risk-reduction program, periodic reviews of current controls occur in order to identify opportunities for improvements or enhancements. Each product family is the responsibility of a designated product steward, who serves as the champion for continuous improvement through the risk evaluation and reduction process.

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Customers and the public are advised, however, that the hazard information for a product is only one of several factors that can affect potential risks presented by that product in any particular use and application. In using our products, customers should follow properly use instructions and ensure that appropriate personal protective equipment is used. All these points are critical components in reducing potential risks of these compounds as of any chemical product.

### **Regulatory Compliance:**

Because octyltins are reactive, many regulatory agencies supervise transportation, use and disposal of these materials.

The U.S. Department of Transportation and the International Maritime Organization classify octyltins as toxic and environmental hazardous. International shipping is controlled by the United Nations Transport of Dangerous Goods Code.

Use of octyltin compounds is covered in the U.S. by the Toxic Substance Control Act (TSCA) and in Europe by REACH.

### **Manufacturing and Processing:**

Production takes place in closed systems which ensure proper containment of materials through each stage of production or handling. These production units are regularly inspected by third-party inspectors certified by regulatory authorities.

### **Transportation:**

These substances are transported in approved packaging in accordance with relevant transport regulations. Approved packaging includes Intermediate bulk containers, standard steel drums, big bags, paper bags with suitable protective liner, and combination packaging of various sizes.

### **Exposure Potential:**

These substances are used in the manufacturing process and are not present in end-use consumer goods in a form that would expose the consumer. All processes, including manufacturing, transportation, disposal, and emissions are controlled and regulated by state authorities and regulations. Specific community and consumer exposure is not expected through appropriate distribution and use.

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Due their biohazard potential, any exposure to octyltin compounds should be avoided. These materials can affect skin and respiratory system. Therefore, workers should not be exposed to aerosols or vapors during their manufacture, packaging, transportation, and application. Any residue of octyltin compounds in finished goods is controlled; there is no risk of exposure from the final product.

Proper disposal of packaging is necessary, as well, to prevent accidental releases into the environment. Workers handling these substances need to be properly trained on material properties and are obliged to wear specific protective equipment when risk of exposure can't be excluded.

LANXESS Solutions US Inc. sells these products only to approved commercial customers whose employees have received proper training in their handling and use.

### Conclusion

The products which were produced using octyltin compounds are an integral part of daily life. They are an integral part of living life as comfortable, safe and future-oriented as possible. Risks associated with handling of octyltins in manufacturing settings are managed through training, engineering controls, personal protective equipment, and compliance with regulations governing transportation, use, and disposal of these materials. Octyltins do not represent a risk to consumers who use finished products manufactured with their help.

### Contact Information

For more information, please contact us by our web site:

<http://www.LANXESS.com>

## Notices

### Use and Application Information

The manner in which you use and the purpose to which you put and utilize our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations are beyond our control. Therefore, it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether they are suitable for your intended uses and applications. This application-specific analysis must at least include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by us. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale. All information and technical assistance is given without warranty or guarantee and is subject to change without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all liability, in tort, contract or otherwise, incurred in connection with the

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