



**VIKAS eCOTECH LTD.**  
(Formerly Vikas GlobalOne Ltd.)

# **OrganoTIN Stabilizers – A safe & sustainable alternative**

**WHITE PAPER**

# How Organotin (MTM) stabilizers can help Indian PVC pipe manufacturers meet toxin-free global standards in manufacturing

## Overview

Across the progressive nations of US, Europe and Asia use of lead-based stabilisers in PVC pipe manufacturing has been voluntarily ceased or mandatorily banned by the end of 2015.

The global PVC pipe manufacturing industry has shown courage and acted responsibly in phasing out lead based stabilisers and plasticisers in Europe, US and some nations like Australia and South Korea. The harmful effects of lead have been medically proven. Hence, moving towards a lead-free world is becoming an increasingly imperative need.

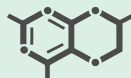
India currently does not have any industry volunteerism or government regulation to ban lead-based stabilizers in PVC pipes. This is especially critical in pipes used for carrying water for drinking, irrigation or cooking. However, few Indian PVC pipe manufacturers have resolved to shift to toxin-free stabilisers in their manufacturing.

## Organotin - A safe and eco-friendly alternative

Organotin stabilizers or MTM (Methyl Tin Mercaptide) are tin(Sn)-based stabilizers primarily used in rigid PVC applications for food

and water contact. Stabilizers are added to PVC compounds as critical ingredients to maintain the properties of the end product throughout its life cycle.

### Advantages of Organotin stabilizers

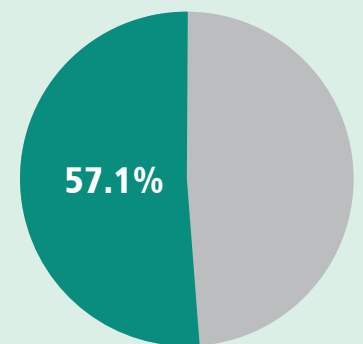


- Lead-free, non-toxic, safe and eco-friendly
- Sanctioned by most international legislations for potable water pipes and fittings
- Extensive global approvals for food contact applications with equal or improved strength (efficacy)
- Approval in all European countries and USA for potable water pipes

Today, lead-based stabilizers are being phased out worldwide in a planned manner. In Europe, the phase out is driven by the Comprehensive Chemicals Regulation (REACH). Globally, the PVC stabilizer market is estimated to be worth USD 3.8 billion by 2020.

With environment-friendly and non-toxic stabilizer alternatives,

### PVC Stabilizer Market



■ Asia-Pacific market Share (2014)

**Estimated Market size in 2020**

**USD 3.8 billion**



it presents a huge opportunity to tap. The Asia-Pacific market is the largest, registering 57.1% share in 2014. With the global manufacturing base moving to Asia and a special focus on China and India, these markets are expected to register significant growth.

## Europe takes the lead in switching to environment-friendly stabilizers

The voluntary program Vinyl 2010 is leading the initiative in Europe. Northern Europe has completely switched to alternate stabilizers



because of both legislation and market pressure. In the United Kingdom permission to use lead in potable water pipes expired in 2003. Between 2000-2011 lead stabilizer consumption (in the EU-15) decreased by 103,972 tonnes (81.8%), moving towards zero usage by 2015.

The European Union has completed the first stage of phasing out lead stabilizers in 2015. In South America and China, large processors are switching voluntarily.



### Role of Stabilizers



- Achieve an optimum balance of ecological and economical benefits
- Enable custom properties in end products
- Enable use in product engineering
- Enhance the key properties of plastics
- Ensure efficient processing without sacrificing physical properties
- Provide higher performance in the intended function
- Be thermodynamically constrained from free migration to the surface

### Industries switching to Organotin stabilizers

Organotin stabilizers are being increasingly adopted by industries such as medical devices, agriculture & infrastructure pipes, medical components and the packaging industry. As most of the end products have significant human contact, being lead-free is a key requirement that is driving demand.

Indian manufacturers who are looking at exports or supplying to MNC clients have to adhere to lead-free stabilizer norms of EU, America and other progressive nations. Thus, more and more players especially in the organized and premium product offerings space are shifting to green and environment-friendly stabilizers.

Organotin stabilizers are the only safe and eco-friendly heat stabilizers that can be used for transparent and food-grade PVC applications.

Today, a key advantage is that Organotin stabilizers are suitable for critical applications. They are FDA-approved PVC additives and meet the health standards & regulations of the most advanced nations. While the Indian market size is 6 KTPA, the global market is about 140 KTPA.

### Opportunity in Indian PVC pipe manufacturing

Lead-based stabilizers in PVC pipes used for water, plumbing or sanitation use are being banned or voluntarily discontinued. Consumer awareness for greener and safer products is creating demand for

Organotin stabilizers in food-grade applications. With the National Green Tribunal giving a notice to major PVC pipe manufacturers and the Government of India, eco-friendly stabilizers like tin-based stabilizers will become the industry's preferred choice.



Currently, premium PVC pipe manufacturers are already using Organotin as a stabilizer for pipe manufacturing in India. From an exports perspective, North America offers a huge market as it is the largest user of Organotin stabilizers.

Organotin stabilizers are basically made of methyl, butyl and octyl

groups. They are used in a range of products including drinking water pipes. Among these, octyl tin stabilisers are also used for food contact applications and have been duly approved by health and regulatory bodies. Today, about 3.5 percent of the world's total tin consumption is used up in heat stabilizers for PVC.

The Indian PVC industry and various associations in PVC pipe manufacturing can create self-pressure groups to ensure that Organotin stabilizers are made compulsory for members. This will help the local industry gain global acceptance in terms of sustainable practices but also help in commanding a premium pricing and brand value for their products.

### Sources:

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## About Vikas Ecotech

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