

# Marine Safety Flash

## A16-24 (15<sup>th</sup> July)

### Spontaneous combustion fish oil soaked rags

#### Incident Overview

Crew had been involved in maintaining the shark jaws with WATTYL FISHOILENE. In doing so 3 or 4 of rags had been used and then placed in a black plastic bucket prior to being hung out to dry. The bucket of rags was left out on deck for approximately 45mins when the member who was returning to hang up the rags noticed smoke coming from the bucket and immediately poured water over the rags and into the bucket, extinguishing the smouldering rags.



#### Key Findings

WHAT IS SPONTANEOUS COMBUSTION? Spontaneous combustion is a by-product of spontaneous heating, a process by which a material increases in temperature without drawing heat from its surroundings. If the material reaches its ignition temperature, spontaneous ignition or combustion occurs.

The principle at in this case was that an unsaturated oil – Fishoilene – was in the process of curing / drying when a chemical reaction (Reduction Oxidation) took place. This chemical reaction creating heat (Exothermic Reaction). If the heat cannot dissipate quickly enough (insulated by a pile of rags, for example), the process can accelerate creating more heat and eventually resulting in combustion. On the day, this was further influenced by being left in a black bucket, in the sun on a hot day with no breeze

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Extract from the chemical's MSDS:

## Section 7: Handling and storage

### PROCEDURE FOR HANDLING

- *Rags wet / soaked with unsaturated hydrocarbons / drying oils may auto-oxidise; generate heat and, in-time, smoulder and ignite. This is especially the case where oil-soaked materials are folded, bunched, compressed, or piled together - this allows the heat to accumulate or even accelerate the reaction*
- *Oily cleaning rags should be collected regularly and immersed in water, or spread to dry in safe-place away from direct sunlight or stored, immersed, in solvents in suitably closed containers.*

## Recommendations

- Check the MSDS for *any* chemicals you use
- Review Chemical stock for Unsaturated Hydrocarbon products – these usually have the suffix **ene**.
- Carry of a JHA for **use** (in all applications of the product), **storage handling** and **disposal** of the product and apply the controls identified. This is be stored on site and attached to the products' MSDS.
- Substitute to be identified in order to replace this product.