



# Safety alert

29/05/2023

## Volatile Rust Inhibitor – Present in Steam Gland Pipes

### 1. What Happened?

Contractor was welding a flange onto a steam gland pipe when a powdery white substance inside a pipe has ignited.

A white flame has resulted, contractor had hot work controls in-situ and it was extinguished immediately by the welder.

The substance has turned out to be a Volatile Rust Inhibitor that is applied into the pipe at the point of manufacture in Japan.



### 2. How did it happen?

Volatile Rust Inhibitor (VP-1, Dicyclohexylammonium Nitrite) is a combustible material applied to pipes/fitting prior to shipping.

The welding in close proximity provided an ignition source.



### 3. What did we learn?

VP-1 is used in some pipe/fittings coming from overseas to prevent moisture build up from shipping.

Mechanical Contractor and CEL were unaware of this process.

The flame has a white flare like intensity – which adds strength to it being a chemical reaction/burn.

If white powdery substance found in pipe, clean the end of the pipe via cloth or wire brush using appropriate respiratory protection, allow pipe to self ventilate.

Have controls in place regarding hot works, adequate PPE in regards to potential fumes, exclusion zones while welding.



### 4. How can we improve?

Procurement to be aware of pipe/fittings being coated in this going forward.

Inspect pipes for white powdery substance prior to hot works.