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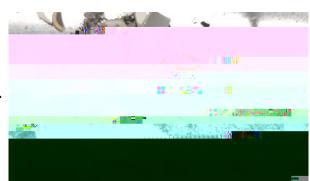
Prevention of fires from energetic materials.

The UNSWS afety team are issuing this safety alert as a reminder about the possible spontaneous oxidation of energetic materials (such as reactive metals) in air:

An incident occurred where thin film metal flakes removed during routine maintenance of a physical vapour deposition system spontaneously reacted with air and became an ignition source, resulting in a small fire in a waste bin

The incident investigation found that:

A very small metallic flake removed from a vapour deposition system during routine maintenance had been tapped from the tip of a vacuum cleaner into a domestic waste bin



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that there had been a small fire in the bin which was already extinguished

The most likely cause of the fire was identified to be either:

Material oxidation (ornitridation) of finely divided titarium particles resulting insportaneous ignition of vapous emanating from the isopropanol wetted wipes, or

Exothermic reaction between high purity titarium and high purity aluminium resulting in an ignition has a o

Where reactive metals (such as titarium, aluminium, nickel, but possibly also others) are in use, the possibility of sportaneous reaction of reactive metals with nitrogen or oxygen in air should be considered in the Risk Management Formand controls implemented and documented in the Safe Work Proced fl r Printhe So

Consider how these materials and waste products need to be hardled and stored, especially in relation to material compatibility. Waste materials can still carry the risk of the original material.

Template revised 16March 2023