



Miss Identification of Chemicals

Misidentification of chemicals is among the greatest risks for multi-use or batch production facilities, but it can happen in any facility. Misidentification must be considered for any supply chain where multiple chemicals are stored or transported. When doing the Process Hazard Analysis, the miss identification of chemicals should be addressed.

How does misidentification occur? Missing, unclear, or incorrect labelling, Storage of substances outside their normal place, Different substances stored in similar looking packaging, Skipping “duplicate” checks, Ignoring unusual appearance of a familiar substance, Fatigue with repetitive or burdensome procedures, Delivery of correct substance to wrong vessel/tank/reactor.

Case study 1: Sodium hydrosulphide (NaHS) mistaken for potassium hydroxide (KOH)

Due to overstocking at the supplier, bags of NaHS were stored as overspill in another area alongside KOH. Both products used similar bags and pallets. One pallet of 40 bags KOH was ordered, but one pallet of NaHS was delivered to the truck. The forklift operator, a second storeman, and the truck driver were all required to check the product. All three checked the amount, but not the substance labels. The pallet was delivered to site with a docket marked as checked. The pallet was unloaded and given a label marking it as KOH. Procedure required sampling and analysis before release to use a delivered substance. Contrary to procedure, the delivery was accepted to the site store without a release label. Two operators loaded a reactor vessel by manually opening and emptying bags, failing to notice inconsistent labelling. When loading a second substance (MCPA, a herbicide), an unexpected reaction began, forming a blockage in the vessel. When the operators tried to clear the blockage, a violent reaction began in the vessel exposing the operators to hydrogen sulphide gas. One operator was able to escape to clear air. The other was overcome and needed rescue. Both operators survived.

From the investigation the following lessons were drawn: A product error may cause extremely serious accidents in terms of: safety of personnel, environmental risks, the process, quality of the product, effects to the brand image, A failure may cross several control "barriers" devised on the basis of procedures. In this case the failure crossed at least five barriers without being detected. It is

imperative that procedures for identification and storage are followed if a substance is to be used in a process.

How do we Prevent Misidentification :Good labels should be highly visible, shown on all packages of a delivery unit (e.g. bags in a pallet), robust labels (e.g. high adhesion, weather proof, etc.), material name written in large easily readable characters, no ambiguous, confusing or similar names, no abbreviated names if products have similar abbreviations. **If a label is not clear, take extra care. If a label is missing, have the substance checked. If a name is similar to another substance, take extra care.**

Sampling and Analysing before use: Can be used in almost every situation, providing positive identification. May be unfeasible if product is too hazardous to sample safely, May be impossible to sample every delivery (e.g. many individual product bags),Spot check sampling may be used to guard against common, low hazard mistakes, Full sampling may be used for high hazard cases, e.g. highly reactive, toxic, or in products for human consumption, **Is a substance meant to be sampled before use? Check for release label or authorisation.**

Segregation Storage: Physical separation of incompatible substances, Must be backed by documentation and training, As shown in case study one, segregated storage can fail! “Temporary” storage outside of normal areas should be avoided unless absolutely necessary and safely managed, If temporary storage must be used, must be clearly marked – labels are not enough!, Not safe to assume a substance has been checked when entering storage – may be in the wrong place.

Training :Operators should know how to react to: unusual colour of a substance, unusual particle size or viscosity, missing or illegible labels, a different container or package than usual, a different weight of the package, non-matching couplings of hoses and pipes, unusual name or description of the substance on the label, discrepancies between transport documents and labels.

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News from our Back Yard

Irate residents won't allow Durban chemical plant to reopen after leak

Durban – Residents of a blue-collar neighbourhood in the south of Durban have refused to allow the restart of a chemical factory that emitted noxious fumes into the area and left them with alleged breathing problems, headaches, and rashes.

The residents met outside Safripol's Mobeni plant on Saturday morning to demand explanations for the leak from general manager Anton Booysen and to hand him a list of demands.

Safripol (formerly Hosaf) manufactures and distributes polyethylene terephthalate resin and polyester fibre. It is situated just metres away from a school and homes.

This is reportedly not the first time the factory has emitted fumes due to a leak, but according to residents, the latest incident was “the worst ever”.

The chemical stench was reported as far away as Glenwood and Umbilo to the north, and to Amanzimtoti in the south. The smell was apparently as a result of Dowtherm, a compound used in industrial heat transfer systems.

Source: IOL

Pupils affected in Effingham ‘noxious gas exposure’

AT least 15 learners have been hospitalised after being exposed to a ‘noxious gas’ at a primary school in Effingham.

According to emergency personnel, the incident was initially reported as a gas leak.

Netcare 911 spokesperson, Shawn Herbst said only one classroom at the primary school was affected.

“The principal of the school had initiated the emergency response plan when ambulance services arrived on scene. The classroom of about 30 children were moved to the entrance of the school in a well-ventilated area. We treated around 15 learners who were in stable conditions who were exposed to a noxious gas. The affected learners aged between 11 and 12 complained of itchy throats and shortness of breath. They were transported to various north Durban hospitals. It is unclear what the noxious substance was that caused the symptoms,” he said.

Source: North Glen News