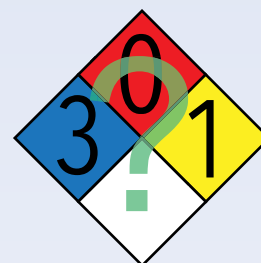
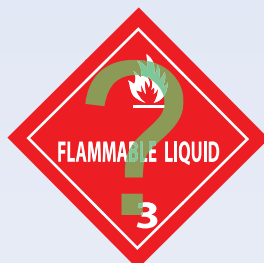


Hidden Hazards

We all respect a sharp knife, knowing the potential for a serious cut. Similarly, we are naturally cautious around a drum of hazardous material that has the appropriate labels. However, it is difficult to determine if a pipe or vessel is full or empty, and whether it is pressurized.

While dismantling a plant, workers did not realize an unmarked and undocumented section of piping contained sulfuric acid, which leaked and injured an employee. This shows that some hazards are more obvious than others. Operators should treat all hazards as if the system is in its worst-case condition until they can obtain more information.



Did You Know?

- Hazards must be identified and understood, and systems must be put in place to manage them safely. However, you can only manage hazards that you recognize. Chemical and petrochemical plants do not have many moving parts that show activity, and it is sometimes challenging to see impending hazards.
- It is especially important to be aware of hazards when opening piping or vessels. Without a thorough understanding of the conditions inside a piece of process equipment (*e.g.*, temperature, pressure, and past and present contents), exposing its interior to the surroundings is difficult to prepare for and can be dangerous.

What Can You Do?

- Develop process knowledge so that each operator is aware of the contents of each piece of equipment. For reactive systems, this could change over time.
- Verify that piping and equipment labeling is accurate and clearly visible and readable.
- When equipment changes service (either with different batches or after it is changed physically), review the alteration using management of change (MOC) processes, and consider whether the equipment labeling needs updating.
- Follow line-breaking, vessel-opening, and lockout/tagout (LOTO) procedures.
- Many incidents can be caused by poor permitting practices. Diligently complete the required permits for any operation.
- If any issue is unclear or unresolved, ask a safety expert and/or a supervisor to review the situation before you proceed. For more on this, review the June 2018 Beacon.

Hazard identification is the first step in process safety!

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