

# Safety Toolbox Talks

## NITROGEN SAFETY

Nitrogen is the earth's most plentiful gas. Approximately 78% of the air we breathe is nitrogen, (N<sub>2</sub>). We cannot live without it; however, nitrogen in high concentrations can be deadly. Nitrogen is an inert gas. It is colorless and odorless and can displace oxygen in a confined environment. Nitrogen is used as a purge gas in pipelines because of its inertness or unreactivity. It is also used as a blanket gas in vessels and tanks because it is inert and keeps moisture out. Every year, industrial workers are killed by nitrogen. Why is this the case? Because they did not take the proper precautions when using nitrogen, just like taking precautions not to have any open flame or heat around when using oxygen. Nitrogen acts as a simple asphyxiant when inhaled.

### Precautions:

- When opening nitrogen cylinders or pipelines lines, insure that you are in a well ventilated space. Bleed off pressure slowly. A confined space with nitrogen present is a killer.
- Avoid directly breathing nitrogen, when using it. A respirator will not save you if the percentage of nitrogen in the atmosphere increases to 90%, displacing oxygen down to around 11%. Only a self-contained breathing apparatus can be used in this type of atmosphere. The results of overexposure to nitrogen can be sudden and immediate. If oxygen the level falls below 18%, seek a safe environment immediately.
- If a co-worker has been overcome with nitrogen in a confined space, DO NOT rush in unprotected to try to rescue. Immediately call 911, then put on an SCBA, to attempt rescue of the person.
- Always test confined space atmospheres and continuously monitor it if compressed nitrogen gas is being used in that atmosphere for purging.
- NEVER open a vessel that is under a nitrogen purge to look into it, without first having a SCBA on and operating. The effects of nitrogen poisoning to the body is immediate, and workers have been known to lose consciousness and fall into vessels that were open under a nitrogen purge.
- Shut off all cylinders and nitrogen supply tanks when finished with use. Properly secure cylinders and tanks to a non-moveable structure. All empty and full containers should be labeled

