



Safety Alert

From the International Association of Drilling Contractors

ALERT 03 – 01

NITROGEN BOTTLES IMPROPERLY FILLED

WHAT HAPPENED:

Recently a Toolpusher performed a gas test on the Nitrogen(N₂) bottles on location. One nitrogen bottle was found to contain Oxygen (O₂). The bottle had the proper fittings and was marked Nitrogen. In several other international areas where the Oxygen (O₂) and Nitrogen (N₂) bottles are identical Oxygen was also found in bottles marked "Nitrogen". If a N₂ bottle containing O₂ is used to charge equipment such as a mud pump pulsation dampener it could lead to potential loss of life and/or equipment damage.

CORRECTIVE ACTIONS: To address this issue, the company instructed all operations personnel:

- Remember, a mixture of Oxygen and Nitrogen gases will act as an explosive agent.
- Contact suppliers and have them document the procedures they use when filling bottles.
- Ensure each bottle is properly marked/labeled for material being used.
- Implemented a policy to test all N₂ bottles on all locations to determine the quality of N₂ received from suppliers.

THE COMPANY ISSUED THE FOLLOWING DETECTION METHODS:

- Where possible this verification test should take place in the area yard prior to the bottles being shipped to the field. The bottles should then be marked that they have been checked.
- Testing options are:
 - Each location (Rig) should have a hand held pump for gas detection. Insert an Oxygen test tube and slightly open N₂ bottle. Pump handle twice. If material inside tube turns black it is a positive test for Oxygen. Mark bottle not usable and return to vender.
 - With a hand held Multi Gas Detector, hold detector in front of N₂ bottle. Open bottle slightly. Normal Oxygen reading is approx. 20%. If alarm sounds and O₂ level goes to 0% then this indicates the bottle does not contain O₂. If reading remains at 20% O₂ or rises it indicates a positive test for O₂. On certain units, the alarm also sounds for high levels (above 23.5%) of O₂ so check the readout for correct percentages of O₂. For bottles testing positive for O₂, mark not usable and return to vender.

IADC Note: Refer to Alert 02 – 06 or Section 6 of the IADC APRG for additional information.

The Corrective Actions stated in this alert are one company's attempts to address the incident, and do not necessarily reflect the position of IADC or the IADC HSE Committee.

This material is presented for information purposes only. Managers & Supervisors should evaluate this information to determine if it can be applied to their own situations and practices.
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