The Hazard
Nitrogen is commonly used in cargo tank operations to blanket shipments of flammable liquids – to reduce the danger of combustion, and food products - to extend shelf life and prevent contamination. Many non-food and non-hazardous shipments also use nitrogen to exclude oxygen from the product. Nitrogen is also used to pressure unload liquid products and to assist drying during cleaning operations.

Nitrogen is odorless, colorless, tasteless, and nonirritating: Nitrogen has no warning properties. Humans possess no senses to detect the presence of nitrogen. Nitrogen blankets and purges can displace oxygen in the atmosphere. If oxygen levels fall below 19.5%, you may experience signs of asphyxiation and death could result.

Protecting Yourself
- Be aware of possible pressure inside any tank before accessing the tank.
- Do not place any body part into the “Line of Fire” when opening a valve or manway to avoid being struck by the pressure or flying equipment if the tank is under pressure.
- Always expect pressure, or product, when opening a valve - take care to avoid exposure through body position and use of appropriate PPE.
- Never enter a transportation tank without first testing the atmosphere with a calibrated four function meter – testing for oxygen, carbon monoxide, flammable vapors and hydrogen sulfide. Test the entire space at various levels, as gases can stratify. If the oxygen level is less than 19.5% DO NOT ENTER the space. Ask your supervisor for specific permit required confined space requirements.
- Call 911 and activate the emergency rescue plan for your facility if you discover an unresponsive person in a tank. Do not attempt a rescue of anyone down inside a tank unless you are trained, authorized and have the proper rescue equipment.

Recognition
A key to protecting yourself and your co-workers is recognizing when nitrogen could be present in your workplace and to take steps to protect people from nitrogen exposure.

Not all trailers or tanks containing nitrogen will be marked with tags or signs. You should expect a nitrogen atmosphere unless you can prove it is not there. Signs of nitrogen exposure include rapid pulse and breathing, dizziness, fatigue and nausea leading to unconsciousness. If anyone shows these signs - call for assistance immediately.

Response / Responsibility
Safety starts with you! Your awareness of workplace hazards, and your response to take the right action to protect yourself, are the first lines of protection from nitrogen hazards.

Pay attention to warning labels, tags and other clues that a trailer, tank or railcar could contain nitrogen and take protective action. Discuss this with your co-workers so everyone can go home safe. People are counting on you: Play it Safe!