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Explosives Inspectorate | Alert | No.110 V | 01 March 2023

Vehicle collision resulting in ammonium nitrate spill

What happened?

An explosives Mobile Processing Unit (MPU) towing a trailer was involved in a collision with a B-Double truck on a public highway. The incident resulted in a spillage of ammonium nitrate.

How did it happen?

An MPU was towing a fully loaded trailer of Ammonium Nitrate Prill (AN) and Emulsion (ANE) when it slowed down to stop at roadworks. The trailer was struck from behind by a loaded commercial freight B-Double truck. The impact caused the MPU trailer to roll over onto its side, which resulted in a spillage of approximately 1.5 tonnes of AN.

Key issues

- the AN tank hatch assembly failed to contain the AN following the collision
- contamination of AN with fuels, organic matter, or other chemicals
- potential for decomposition/detonation of AN when exposed to fire or high temperature
- exposing people, property, and environment to an explosive hazard

Recommendations

Operators conducting explosives transportation activities should:

- ensure that all hatch assemblies and fittings on transport tanks are constructed to a standard that will maintain their integrity in a collision or roll over situation
- prior to transporting on a public road, ensure that a risk-based journey management plan has been completed. This should incorporate Safety, Security and Fatigue Management
- ensure emergency response plans encompass worst-case scenario outcomes
- ensure adequate resourcing for emergency response capability

- ensure drivers and sub-contractors are trained in the hazardous properties of the load and the emergency procedures to be followed
- ensure that Emergency Procedure Guides carried in explosives transport vehicles clearly define the actions to manage any explosive or precursor emergency
- ensure that persons who are involved in accidents/incidents are assessed and cleared by a medical professional prior to return to work

Investigations are ongoing and further information may be published as it becomes available. The information in this publication is what is known at the time of writing.

We issue Safety Notices to draw attention to the occurrence of a serious incident, raise awareness of risks, and prompt assessment of your existing controls.

References and further information

Australian Code for the Transport of Explosives by Road and Rail Third Edition

(https://www.safeworkaustralia.gov.au/system/files/documents/1702/australian_code_transport_explosives_road_rail_3rd_edition.pdf)

Australian Dangerous Goods Code 7.7

(https://www.ntc.gov.au/sites/default/files/assets/files/ADG%20Code%207.7_0_0.pdf)

Queensland Explosives Inspectorate Explosives Information Bulletin no. 52 – Transport of SSAN

(<https://www.rshq.qld.gov.au/safety-notices/explosives/transport-of-security-sensitive-ammonium-nitrate-ssan>)

Queensland Explosives Inspectorate Explosives Safety Alert no. 32 – MPU rollover

(<https://www.rshq.qld.gov.au/safety-notices/explosives/transport-incident-involving-a-mobile-processing-unit>)

Queensland Explosives Inspectorate Explosives Safety Alert no. 86 – AN Explodes during

transport incident (<https://www.rshq.qld.gov.au/safety-notices/explosives/ammonium-nitrate-explodes-during-transport>)





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Issued by Resources Safety & Health Queensland

Safety: This information is issued to promote safety through experience. It is not to be taken as a statement of law and must not be construed to waive or modify any legal obligation.

Placement: Place this announcement on noticeboards and ensure all relevant people in your organisation receive a copy, understand the content, findings and recommendations as applicable to their operation. SSEs should validate that recommendations have been implemented.

All information on this page (Vehicle collision resulting in ammonium nitrate spill - <https://www.rshq.qld.gov.au/safety-notices/explosives/vehicle-collision-resulting-in-ammonium-nitrate-spillage>) is correct as of time of printing (24 Mar 2023 4:17 pm).