



PO Box 8 Mulgoa, NSW 2745
Phone 0428 263 482
E:-Admin@completepetro.com.au
ABN:- 33 628 418 191

Petro-chemical Engineers - Fuel and Chemical Systems Design and Installation
Dangerous Goods and Hazardous Substances Storage and Handling Specialists
UPSS Decommissioning - Site Remediation Planning - Environmental Support Services.

To the Committee,

14/11/22

Some ramblings from experience, sorry I don't currently have time to present something more professional, but perhaps there will be something here that is helpful.

My main concern over the years has been the nonchalant attitude users take to managing products that can kill.

Ammonium Nitrate is a security sensitive dangerous substance.

Ammonium Nitrate is a precursor and must be managed by a "responsible person" Explosives Reg, Part 3 Div 1 cl19.3

In addition to Dangerous Goods Regs and Standards phrases, the EPA has a good list of items that can/should be applied to storages of hazardous chemicals viz:-

- A storage system Must Not be used otherwise than in accordance with an Environment Protection Plan that is in place in relation to the system.

A storage systems Environment Protection plan must include;

- a loss monitoring procedure. (Usage/old stock/theft)
- An incident management procedure - (spills/dust inhalation/contaminated clothing)
- a maintenance schedule
- the current as built drawings for the system
- plan of the storage site
- a copy of each list of industry standards that have been followed
- a copy of all specifications used.

Reviewed Separation Distances can also be repeated here.



As with all Dangerous Goods, they are! But people tasked with managing and handling dangerous products are not educated sufficiently in the use of these materials... unlike an Explosives engineer who is fully trained and licenced in using the materials he uses, a user of Ammonium Nitrate is NOT LICENCED and probably has no more qualifications than an apprentice Gardener. However if he is to store a sufficient quantity of NH_4 he has to report it to police.

Hierarchy of Risk - 1 - replace. Explain how NH_4NO_3 can be replaced by other products almost equally as effective but less dangerous.

Education - always a key ... but the problem is making the education STICK. Most Ammonium Nitrate users DON'T read SDS's

Identify Users and Prioritise appropriate education/treatment in line with perceived use AND comprehension of users.

Users include personnel who are

- a) semi-literate
- b). Literate but not in control of placing orders
- c). couldn't care less.

Educational material and approach has to be targeted at disparate groups of people.

Users. Broad Acre Farming, Golf Courses, Councils Parks and Gardens, Privately owned Sports Stadiums, Race courses,
Home Maintenance Services (does Jims have a NH_4 training course for franchisees) rural suppliers,

Storage Facilities - needs serious update given that it has probably been years since any user read an AS. And storages tend to be low on the list of priorities for most profit making venues. Council CEO drives a nice car but Parks and Gardens fertiliser storage is shit... pun intended.

Time kept in storage. The Beirut problem started with a storage which had for all intents been "forgotten" for 6 years.

Had there been a time limit based on the quantity it would have been moved, used, sold, well before it began to be stolen. And of course people had to be responsible for the storage. Whilst this is not a good example due to other circumstances it does point out that stores should not be kept at excessive capacity over extended periods of time... A time limit will tend to keep storages at usable limits thus also making users aware of having to pay attention to the storage.

Maximum Capacities. Tricky one but another way of keeping stores under control.

The NH_4 salesman does a good job and the client buys enough fertiliser for two seasons. Of course he doesn't have the storage room to keep that much so he improvises and stores some of it in the welding shed. Etc... you get the picture...

Unless Storage facilities are designed and built to Approved Plans, and Licenced, and subject to Regular inspection by RA then that don't exist.



Some controls need to be exercised by manufacturers who are generally more interested in selling product than to who or how it is stored.

Perhaps manufacturers can only sell certain quantities to registered NH4 users.

Retailers may have to limit domestic sales to small quantities (smaller packaging than 25 kg) and limit numbers.

As hinted above, a recent assignment I worked on was a broadacre allotment with an above ground fuel facility (diesel, bless them) installed inside the maintenance shed..... with an array of fertilisers, weedicides, herbicides, mulch, aerosol cans and yes..... several forms of welding and oxy cutting equipment.

This situation, judging by the cobwebs, had existed for far too long.

This is not uncommon and I have seen similar at Golf Club Maintenance Sheds (Committee will vote on new golf carts but no upgrade to Greenkeepers Maintenance and Chemical Storage areas.!!

Separation distances. As per AS1940 Table 4.3

Section 3 General Requirements, is a good "list" of headings to work from.

Some articles and SDS's recommend a "sensible" separation distance... of course this is definitely NOT sensible where a potentially explosive material is involved and, in the main no-one acts sensibly..... " If it will fit over there, put it there... we will worry about separation distances later.... in 2025 maybe.

In the event that everyone agrees Ammonium Nitrate is dangerous and can cause loss of life then separation distances MUST be prescribed and mandated.

Minor quantities (domestic use - say up to 5 x 25 litre/Kilo bags) 3 metres from any potential ignition source - opened bags are to be used in full, not returned to the Minor Store in an opened condition.

Minor stores should have access to a tarpaulin or weatherproof sheet to prevent deterioration in case of extended storage.

Vapour screens cannot be used unless they are constructed as engineered blast walls.

Commercial Reseller (sand and soil suppliers/ garden centres and similar/ Bunnings/ Mitre 10 Dedicated racking away (5 metre min) from ignition sources such as forklift charging station / space heaters.

Placed in rear of storage area so as not to impede egress from storage area.

Close to external brick walls to limit directions of exposure to fire in other materials.

Inert materials either side of stock holding (minimise risk of fire involvement)

Generally not an issue with quantities as the product moves pretty quickly in small quantities to consumers.

Strict Stock Control to limit qty.

Qty in store may require a Responsible Person to be Licensed if it is to exceed given quantities for resellers.

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The main concern with Ammonium Nitrate is that it can become explosive however **strong consideration** must be given to its ability to generate toxic fumes under certain conditions. Storage areas must provide better than adequate cross ventilation.

Separation distances will vary with quantity but as a starter 5 metres clear space all around is a good place to start with stores just in excess of Minor Quantities. Extrapolation of quantities/distance

Should you have any queries or if any of the above information requires further clarification, please feel free to contact the writer.

