

# Pollution Prevention Technical Information note

## Safe storage and use of emission reduction solutions (ERS) - e.g. AdBlue

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### 1. Introduction

Stricter exhaust emissions for commercial vehicles with diesel engines, (buses, trucks, HGVs and coaches) have been issued by the EU, (Euro 4 in Oct 2005 and Euro 5 in 2008). To meet these standards the automotive industry has adopted several technologies. One is **Selective Catalytic Reduction**, where harmful exhaust gases are converted to nitrogen and water by catalytic conversion. AdBlue is a trade name for an emission reduction solution used for this process.

ERS are stored at refuelling sites and are becoming a common feature at filling stations for commercial diesel vehicles and private depots. Vehicles will have an ERS tank, from which the solution is injected into the engine exhaust stream immediately after the combustion chamber. ERS consumption is between 4 and 6% of the diesel consumption.

### 2. Storing and using ERS.

ERS are usually an aqueous solution of urea. If you store handle and use ERS according to manufacturers' instructions and our guidelines, they pose minimal risk to operators and a limited risk to the environment. However, urea solution is very polluting to surface water and groundwater and has caused several serious pollution incidents from spills at farms where it was stored and used as a fluid fertiliser.

Because urea solution contains ammonia it's corrosive to some metals, such as copper and its alloys. If tanks and pipework become corroded there is a higher risk of a spill that could cause pollution – which is against the law.

It's important that ERS are stored in containers that are specifically designed and manufactured from materials that are suitable for use with urea. This also applies to all storage ancillary equipment, such as valves, dispensing nozzles and pipework.

Urea based ERS are soluble in water and should be kept out of surface water drainage systems discharging to the environment. They **will not** be removed in an oil separator so it's important to isolate drainage from your dispensing area from the surface water system to reduce the possibility of spills and drips causing pollution.

### 3. Reduce the risk of causing pollution

Tank manufacturers are now producing storage solutions specifically for ERS. Steel and plastic storage systems with integral secondary containment are available. Some companies may supply specialist Intermediate Bulk Containers (IBCs) that are delivered full and then collected when empty. We recommend that you use storage and dispensing systems that are specifically designed for use with ERS.

You should make sure that:

- Your container, pipework and dispensing equipment are suitable for use with urea.
- You have secondary containment for the container and ancillary equipment.
- The dispensing area drainage is isolated from surface water drains.
- You have a trigger nozzle with an auto shutoff to dispense ERS. Make sure that the nozzle can't be left in the open position.
- You have appropriate emergency equipment to deal with large and small spills. For example, you could use proprietary spill kits, drain mats, pipe blockers, or permanent valves on drainage systems to provide containment.
- You have an emergency plan and suitable training for dealing with spillages or other accidents. See [Incident Response Planning: PPG 21](#) for guidance to help you write your plan and a template you can use.

Please note – currently there are no specific regulations that require you to use and store ERS according to this good practice guidance, but if we believe there is a significant environmental risk from your activities, we could use our enforcement powers to make you do so.

#### **4. Need more information?**

Contact your local office on 08708 506 506, or email [enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk).

For general pollution prevention advice see [Pollution Prevention Pays](#).

Pollution Prevention Guidelines (PPGs) are available free from our offices or our Website [www.environment-agency.gov.uk/ppg](http://www.environment-agency.gov.uk/ppg)

#### **5. Other useful references:**

The government on-line business advice and support service:

- For England – Business Link [www.businesslink.gov.uk](http://www.businesslink.gov.uk)
- For Wales - FS4B [www.fs4b.wales.gov.uk](http://www.fs4b.wales.gov.uk)