



ADMIXTURE INFORMATION SHEET AIS 7

STORAGE OF ADMIXTURES

Introduction:

Admixtures are delivered in the following containers:

- Non-returnable drums (up to 205 litres).
- Intermediate bulk containers (IBCs)
- 1000 litres.
- Bulk tankers which discharge into fixed tanks or IBCs on site.

All customers are provided with Material Safety Data Sheets (MSDS) which give information on the safe handling of the material and action to be taken in the event of contact with operatives. Almost all admixtures are non-hazardous but they should be contained in the event of spillage. For example, some have a relatively high biochemical oxygen demand (BOD), precluding discharge to any watercourse. It is the user's responsibility to ensure that storage and discharge arrangements minimise the risk of spillage.

Non-returnable drums are normally discharged by pumping out the contents through a small bung hole. Spillage can occur in various ways:-

- Overturning open drums
- Puncturing drums
- Corrosion. This is not a serious risk
- within the best use before period of 12 months.

IBCs are plastic and corrosion resistant. In view of their size and the normal method of discharge by pumping out the contents, the only significant risk of spillage is the puncture of the container, or damage to valves, where fitted.

Bulk storage tanks have traditionally been made of steel single skin construction, which have a bottom discharge. There is a high risk of spillage through failure of the outlet pipe due to accidental damage corrosion, vandalism, or poor operating procedure.

Double wall plastic tanks are available which are very resistant to puncturing and full resistant to corrosion. To reduce the risk of spillage, the contents may be pumped out instead of using a bottom gravity discharge. If a bottom discharge is used the tank should have a recess into which a normally closed, solenoid operated valve is fitted, so that there is no leakage if the discharge line is cut.

Spillage:

The ultimate method of containing spillage is a bund. Bunded tanks must have the capacity to contain 110% of the contents and should be covered over to prevent

the ingress/collection of rainwater. All fittings and pipe connections must be contained within the bund.

Where an open bund is fitted with a valve to discharge rainwater, there should be a system of keys and named operators responsible for this operation, to ensure the valve is not left open. It is strongly recommended that open bunds be fitted with an automatic pump and bund alarm. Proprietary systems are available.

Contents gauges:

Accurate well calibrated contents gauges should be fitted and suitably positioned/protected to ensure that they are easy to read from ground level and are not damaged, or covered over by concrete/cement spillage

As another safety measure, an 'overflow valve' should be fitted, which automatically closes if the tank is overfilled. This will prevent spillage due to volume errors of faulty contents gauges etc.

Protection from frost:

Small containers, valve and lines are most vulnerable to freezing and suitable precautions such as storage in covered insulated and heated areas and draining and trace heating of lines and valve is a necessary precaution. Larger bulk tanks can be fitted with internal immersion heaters, which will not only protect against frost, but will also improve viscosity and reaction properties. Some admixtures are affected by frost and material that has been frozen should not be used without consulting the supplier.

Colour coding:

As an additional safety measure and as required by CAA regulations (appendix A), all tanks and storage vessels should be colour coded to define the contents.

Remixing admixtures:

This should be done with a rotating mixer blade, not compressed air. Collapsible blades are available to insert through container bung holes.

Information on Admixtures:

For general information on admixtures contact: John Dransfield, CAA Secretary