

Chemical Manufacturing Trade Waste Guideline No. 26

INTRODUCTION

Trade waste discharges from chemical manufacturers have the potential to adversely affect the sewerage system. Waste waters can contain heavy metals, organic solvents, acids, alkalis, dyes, grease/oils, detergents and suspended solids. Appropriate management practices at each site are therefore necessary. For the purpose of this Guideline 'chemical manufacturing' refers to the production of chemical compounds or mixtures from constituent materials.

KEY TRADE WASTE QUALITY REQUIREMENTS

PARAMETER	GENERALLY ACCEPTED LEVEL
Suspended Solids	<500mg/L average
Total Dissolved Solids	<1500mg/L
pH	Between 6-10 units
Temperature	<38°C
Heavy Metals (eg: Cd, Cu, Cr, Ni, Pb)	<10mg/L
Cyanide	<5mg/L
Flow rate to sewer	Dependant on capacity of receiving sewer

Note: Discharge limits may be varied under certain circumstances for individual dischargers.

BEST PRACTICE MANAGEMENT ASPECTS

- Staff maintain a register of all chemicals stored on site, including industrial strength detergents and other cleaners, with their respective volumes
- Care is taken in the separate storage of incompatible reagents or waste products.
- All work site staff are informed of the appropriate methods for managing process wastes and spillages of all products and reactants.
- Chemicals at hand to pre-treat or neutralise discharges (e.g. acids to neutralise alkalis).

DESIGN / INSTALLATION

- Generally, aqueous waste waters complying with [SA Water's Standards of Acceptance of Liquid Waste to Sewer](#) may be discharged to sewer.
- The following **shall not** be discharged to sewer
 - Organic solvents or aqueous solutions of organic solvents (without the expressed permission of the Trade Wastes Branch).
 - Liquids that are immiscible with water.
 - Liquids that can release toxic or anaesthetic vapours from solution.
 - Solutions of resins or compounds capable of undergoing polymeric reactions which could block sewers or pumping stations.
 - Compounds capable of explosion or combustion.
 - Chemicals which are insoluble in water (i.e. less than three percent soluble in distilled water).
- All chemical/solvent stores, process and waste tanks shall be bunded in accordance with [Trade Wastes Bunding Guideline No 4](#).

Reviewed January 2011

- All laboratory sinks are bunded to prevent bench top chemical spills from flowing to sewer.
- Those waste waters and process liquors not permitted to be discharged to the sewer are contained in an approved blind tank and disposed of by a licensed liquid waste contractor in accordance with [Trade Waste Blind Tank Guideline No. 3](#).
- All radioactive solutions discharged comply with the [Department of Health Resources regulations](#) and are discharged directly to sewer, via a flushing cone and drainer, bypassing any effluent holding tanks. See Figure 1.
- Waste waters and process solutions with a pH outside of the range 6 to 10 may be discharged to sewer via a waste water pre-treatment system that includes a final buffer tank and approved pH adjustment system.

TYPICAL PRETREATMENT

- Removal of all particulate material by screening, settling or filtration.
- pH correction (if required).
- Controls and equipment to facilitate cracking of emulsions (if required).
- Effluent equalisation to overcome extremes of pH, temperature and flow (if required).

ADDITIONAL PRETREATMENT

- Coagulation/ flocculation
- Precipitation of any metals as required
- If required, sample submitted for laboratory analysis (NATA registered or equivalent Laboratory).

ADDITIONAL INFORMATION

Mains Water Protection (AS/NZS3500-2003 Part 1), [Trade Waste Batch Treatment Guideline No.17](#), [Trade Waste General Policy](#).

Reviewed January 2011

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