

## Paint Stripping

### Trade Waste Guideline No. 22

#### INTRODUCTION

Trade waste discharges from companies conducting paint stripping have the potential to adversely affect the sewerage system. Wastewaters may contain suspended solids, volatile solvents and heavy metals such as lead and zinc. Appropriate management practices at each site are therefore necessary.

#### DEFINITIONS

For the purpose of this Guideline 'paint stripping' refers to the process of using chemical means to remove paint, varnish, undercoat or other coatings for the purpose of restoration or refinishing. The Guideline applies to antique restorers, furniture restorers, French polishers, building restoration and large machinery/aircraft paint removers.

#### KEY TRADE WASTE QUALITY REQUIREMENTS

PARAMETER	GENETALLY ACCEPTED LEVEL
pH	Between 6-10 units
Suspended Solids	<500mg/L
Total Dissolved Solids	<1,500mg/L
Heavy Metals (e.g. Lead, Zinc etc)	<10mg/L
Flow rate to sewer	Dependant on capacity of receiving sewer

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

#### MINIMUM PRETREATMENT REQUIREMENTS

- Operators may choose to contain all wastewaters in a blind tank, as per [Trade Waste Blind Tank Guideline No.3](#) for removal by a licensed liquid waste contractor.
- Waste concentrates from process tanks must be contained in a blind tank for removal by a licensed liquid waste contractor.
- Only wastewaters from the wash down step may be directed to sewer. Articles shall be well drained prior to this step, to reduce the carryover of process solution.
- All tanks and containers holding process liquors, oils, wastewaters or chemical solutions must be bunded as per [Trade Waste Bunding Guideline No. 4.](#)
- Gross solids shall be screened via a 225mm silt trap fitted with a 3mm mesh basket or similar device located at the low point of the wash bay floor.
- Screened wastewater shall undergo additional pre-treatment before discharge to sewer to remove fine solids and dissolved heavy metals. This may include pH correction and polymer addition prior to settling in clarifier/tank.

#### ADDITIONAL PRETREATMENT

- Additional treatment may be required in accordance with the [Trade Waste Batch Treatment Guideline No. 17.](#)
- Dewatering of accumulated solids using a filter or belt press.

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Further information  
(08) 7424 1336

www.sawater.com.au  
tradewastebranch@sawater.com.au

## BATCH TREATMENT EXAMPLES

### EXAMPLE 1 - Batch Treatment - Caustic Soda Process

- Residual sodium hydroxide elevates wastewater to pH10 to 12. This is responsible for the high levels of dissolved metals in untreated, screened effluent.
- Reducing the pH precipitates these metals and allows them to settle with other solids.
- The use of acids for restoring colour to stripped timber benefits the pH balance, but additional acid dosing is usually needed to balance the residual sodium hydroxide.
- Alum (aluminium sulphate) solution is preferred for acid dosing, as it is relatively safe to handle and helps coagulate fine solid particles.

#### Procedure

1. Pump wastewater to above ground treatment tank
2. When full, add **alum solution** to treatment tank until **pH is between 7.0 and 9.0**
3. Add proprietary polyelectrolyte to assist in flocculation and settling.
4. Allow settling overnight before checking for residual **lead and zinc** levels in clear portion (using test strips) before discharge to sewer.
5. The lower portion containing sludge is pumped to holding tank for drying in air. Solid waste is removed by a licensed waste contractor together with the coarse paint screenings for off-site treatment.

### EXAMPLE 2 - Batch Treatment - Methylene Chloride Process

- Use of methylene chloride/methanol/wax mixtures typically produces easily treated wastewater.
- It is common practice to also use Tri-Sodium Phosphate (TSP) or similar chemical for a neutraliser or final cleanup step. This interferes with solids settling, so additional treatment is needed.
- Occasional caustic soda stripping and acid use may produce unacceptable pH levels in wastewater.

#### Procedure

1. Pump wastewater to above ground treatment tank.
2. When full, add **calcium chloride solution** until coagulation of solids is observed (this step removes the inhibiting effect of TSP).
3. Adjust **pH to within 7.0 to 9.0** using builders' lime if low or alum solution if high.
4. Add proprietary polyelectrolyte to assist in flocculation and settling.
5. Allow settling overnight before checking for residual **lead and zinc** levels in clear portion (using test strips), before discharge to sewer.
6. The lower portion containing sludge is pumped to holding tank for drying in air. Solid waste is removed by a licensed waste contractor together with the coarse paint screenings for off-site treatment.

## ADDITIONAL INFORMATION

Mains Water Protection (AS/NZS3500-2003 Part 1), [Trade Waste General Policy](#), [Standards of Acceptance of Liquid Waste to Sewer](#),

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[tradewastebbranch@sawater.com.au](mailto:tradewastebbranch@sawater.com.au)