

## Dairy food industry

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Trade waste discharges from companies processing dairy food could harm the sewerage system. Appropriate management practices at each site are needed. This Guideline outlines the areas of concern and available technologies for the control of trade wastes.

For the purpose of this Guideline, 'Dairy Food Industry' refers to premises that utilise milk or milk products in the process of making packaged milk, cheeses, butter, creams, fermented dairy foods and ice cream/ice confection.

### Key trade waste quality requirements

Parameter	Generally accepted level
Biochemical oxygen demand	≤1500 mg/L
Suspended solids	≤500 mg/L
Grease/oil	≤100 mg/L
pH	Between 6-10 units
Total dissolved solids	≤1500 mg/L
Temperature	≤38 degrees C
Flow rate to sewer	Dependant on capacity of receiving sewers

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

### Best practice management aspects

- An in-house waste management strategy, consistent with best practice for the Industry has been developed and implemented to minimise the loading of contaminants discharged to sewer.
- Vats or tanks containing viscous material such as yoghurt should be scraped or squeegeed prior to washing.
- Cooling water used in pasteurisers and other areas is directed to cooling towers or other storage vessels to enable reuse (bleed rates should be set to minimise wastage).
- Returned, contaminated or excess products/rejects are considered for reuse as animal feed. If unacceptable for animal feed other options should be considered, such as:
  - Partial treatment or dilution to enable stock feeding.
  - Irrigation of pasture (subject to [EPA](#) approval).
  - Evaporation for solid stock feed.
  - Off-site composting.

- Hauling to an SA Water facility that accepts high strength organic material. Please refer to our [High Strength Organic Waste for Co-digestion Guideline](#) for more information.

## Design installation

- Production areas are designed to divert high strength waste (such as initial line and tank flushes, spills) from sewer. These are held for alternative disposal along with returned/contaminated products. This greatly reduces the load on the trade waste treatment system.
- Wastewaters, process liquors and other materials not permitted to be discharged to sewer contained in approved containers and/or stored in accordance with the [Bunding and Blind Tank Guideline](#).
- Holding/buffer tanks may be required for accepting peak loadings or flows, so that treatment plant capacity is not overwhelmed.
- Tanker receiving areas are roofed and bunded. Only the inside of the tanker and the area surrounding pipe connection points is cleaned in this area. External delivery truck and tanker sections are washed in an approved wash bay. See the [Vehicle Washing Guideline](#).
- Discharge of waste water from cooling towers is in accordance with the [Cooling Water Discharge Guideline](#). In most cases this should be segregated from other waste streams, where pre-treatment requirements are different.
- Tanks and storage vats should be designed to enable gravity to drain the majority of product before cleaning.
- Valve systems should be designed to enable pigging of all areas. Alternatively air flushed systems can be used.
- Cleaning in process (CIP) systems use three main chemical types: acid, alkali and sterilant. These should be purified if possible and returned to main storage tanks for reuse until spent or contaminated. Waste acid and alkali should be used for neutralisation of each other. Waste water above pH 10 (because of additional use of alkali in relation to the acid) should be neutralised with carbon dioxide, flue gas, or other similar product that minimises increases of discharge salinity level.

## Typical pre-treatment (small operations)

- Silt traps/screens with maximum 3mm hole/mesh size including a fixed secondary strainer with maximum 3mm hole size.
- Settling pit.
- Automatic pH correction system with shut off valve.

## Additional pre-treatment (medium to large operations)

- Buffer tank/s.
- Enhanced systems to separate emulsified fats and soluble proteins, with addition of polymers/coagulants and removal using advanced pre-treatment systems (e.g. dissolved air flotation [DAF], hydrocyclone technology, etc.).
- Dewatering of separated grease and solids.

## Maintenance

It is the responsibility of site management to ensure the effective operation of all pre-treatment equipment (e.g. ongoing removal of accumulated grease/solids and chemical replacement).

## More information

Mains Water Protection (AS/NZS 3500.1:2015)

[Backflow Prevention Requirements - Office of the Technical Regulator](#)

[Restricted Wastewater Acceptance Standards](#)