

Auckland Regional Council Technical Sheet I-5

HOUSEHOLD CLEANING CHEMICALS.

EFFECTS ON DISPOSAL SYSTEM RECEIVING SOILS

Use of many cleaning chemicals in facilities served by on-site disposal systems can result in high concentrations of the constituents in those cleaning agents being discharged into the receiving soils. These chemicals and constituents have a massive impact on the quality and condition of the receiving soils over time.

Many of the chemicals can disrupt soil structure and decreased hydraulic conductivity while others can act as bactericides, destroying the essential microorganisms required to achieve the high level of biodegradation in the treatment and disposal systems. This then increases the potential environmental impacts of the contaminants in the receiving environment.

Improved wastewater treatment technologies can only assist so much in reducing the composition and concentration of some cleaning agents, not the strong acids and strong alkaline agents.

The following matters need to be considered when using cleaning agents in a domestic situation:

- Laundry powders are often extremely high in sodium which will destroy the salt balance in the soils. Check the labels.
- Greywater consisting of washing machine wash cycle discharge water can have an alkaline pH of up to 10. Although this will be diluted in a septic tank, it will impact on microorganism populations and also lead to effects on soils structure
- Wastewater flows from dishwashing machines can have an impact on wastewater treatment systems, not only in terms of wastewater flow volumes and additional organic waste, but more importantly in terms of the strong cleaning chemicals.
- Highly corrosive cleaners (such as toilet and drain cleaners) that have precautionary labels warning users to minimise direct contact, are an indication that they can adversely affect the wastewater treatment system. Up to 1 cup of bactericides such as bleach can be sufficient to impact on all the microorganisms/bugs in a septic tank, severely affecting tank performance for some time.
- All cleaning chemicals must be used with care and in all cases, the less that is discharged, the better this will be for the receiving soils in the long term.
- The best solution of optimising the long term effectiveness of the soils within a wastewater disposal field is to minimise the use and discharge of strong cleaning chemicals at source.

Auckland Regional Council Technical Sheet I-6

ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEMS: SUBSTITUTES FOR HOUSEHOLD CLEANING CHEMICALS

Use of the following readily biodegradable substitutes for common potentially harmful household cleaning chemicals will reduce the stress on a septic system, significantly enhance the performance of the whole system and increase the life of the disposal field, while reducing the potential effects of the receiving soils.

GENERAL CLEANERS:

Use soft soap cleaners and bio-degradable cleaners and those low in chlorine levels.

AMMONIA-BASED CLEANERS:

Instead sprinkle baking soda on a damp sponge. For windows, use a solution of 2-Tbs white vinegar to 1-litre of water. Place the mixture into a spray bottle.

DISINFECTANTS:

In preference use Borax: ½ cup in 4-litres of water.

DRAIN DECLOGGERS:

Avoid declogging chemicals. Instead use a plunger or metal snake, or remove and clean trap.

SCOURING CLEANERS AND POWDERS:

Instead sprinkle baking soda on a damp sponge or add 4-Tbs baking soda to 1-litre warm water. It's cheaper and won't scratch.

TOILET CLEANERS:

Sprinkle on baking soda, then scrub with toilet brush.

LAUNDRY DETERGENT:

Choose one with a zero phosphate content and low in alkaline salts (in particular, a low sodium level) and no chlorine.

Use of the following alternatives to standard chemicals is less likely to be of any consequence to the performance of the on-site wastewater system, but are included for completeness only:

CARPET/UPHOLSTERY CLEANERS:

Sprinkle dry cornstarch or baking soda or commercial dry cleaning spray, then vacuum. For tougher stains, blot with white vinegar in soapy water.

FURNITURE/FLOOR POLISHES:

To clean, use oil soap and warm water. Dry with soft cloth. Polish with 1 part lemon juice to 2 parts oil (any kind) or use natural products with lemon oil or beeswax in mineral oil.

METAL CLEANERS:

Brass and copper: scrub with a used half of lemon dipped in salt. Stainless steel: scouring pad and soapy water. Silver: rub gently with toothpaste and wet cloth.

OVEN CLEANERS:

Sprinkle salt on drips, then scrub. Use baking soda and scouring pads on older spills.