



CREST COMMERCIAL CLEANING LTD

Cleaning Products Environmental Criteria

Overview

The following criteria seek to define good environmental and health performance for the Crest range of commercial cleaning products. The criterion stipulates environmental impact of such products throughout their lifecycle.

To reduce environmental and human health impacts, components of cleaning products should either be environmentally innocuous or should readily biodegrade, and the products of degradation should not pose an increased risk to the environment. This document aims to provide Crest customers with information surrounding the use of environmentally responsible products.

The industry has come to think of the use of more environmentally friendly products or those offering “friendlier” benefits to end users, as “Green Cleaning”. While “Green Cleaning” itself also encompasses other aspects this document endeavors to framework the formulation and raw material status of products, as they related to the following characteristics:

- Non-Toxic to Humans
- No or Low Eco Toxicity
- No or Low phosphates
- No or Low Solvents
- No Chelating agents
- Biodegradable Surfactants
- No or Low Volatile Organic Compounds
- Sustainable Surfactants
- Recyclable packaging

Background

The primary function of commercial and institutional cleaners is to remove soils. Huge amounts of cleaners are consumed in New Zealand each year. This represents a potentially significant burden on the environment in terms of wastewater loading and subsequent treatment, emissions of volatile organic compounds (VOC's), resource consumption and disposal of packaging materials.

The major active components in cleaners are surfactants, builders and solvents. Components, such as surfactants, may accumulate and may be toxic or otherwise harmful to the environment. Surfactants provide a significant load on sewage systems. Builders serve to overcome water hardness and improve surfactant performance. Phosphate and nitrilo-triacetic acid (NTA) are commonly used builders. Although NTA is an efficient builder, it increases the mobility of heavy metals in aquatic environments. Phosphates may be a limiting nutrient in some aquatic environments and in many countries the use of phosphates in detergents has been discouraged to prevent unsustainable plant growth and oxygen starvation (eutrophication) of lakes and waterways. In New Zealand waters, the contribution of phosphate from agricultural land significantly outweighs that from sewage however, for local area waste water management systems, phosphate free detergents can reduce nutrient availability for eutrophication.

Solvents are used either to assist in the cleaning action or to provide solvency for other ingredients. Volatile organic compound (VOC) emissions from all-purpose cleaners are significant in comparison to other household products. These VOC's react with nitrogen oxides (NO_x) in the presence of sunlight - producing ground level ozone and photochemical smog. Reducing VOC emissions will thus improve air quality.

The following product criteria will produce environmental benefits by reducing water pollution by reducing the volume of total chemicals used in the products and by limiting the use of (VOC's) and potentially hazardous ingredients, conserving transport and energy and by minimising waste production by reducing the amount and type of primary packaging.

This category includes general purpose hard surface cleaners, glass cleaners, bathroom & toilet cleaners. It specifically excludes disinfectants.

Definitions

APEO means alkylphenol ethoxylate. APEO and other alkylphenol derivatives are prohibited under this standard due to aquatic toxicity.

Builder means any substance intended to maintain alkalinity, and/or bind calcium and magnesium ions (soften the water), and/or keep dirt in suspension, increasing the effectiveness of the detergent. It includes substances such as phosphates, NTA, EDTA, zeolites, sodium citrate, sodium silicate and sodium carbonate.

Carcinogenic means capable of causing cancer. The International Agency for Research on Cancer is the internationally accepted body for the classification of carcinogenic substances. See <http://www.iarc.fr>

Colouring Agents: include pigments & dyes use to give colour to a product.

Contact sensitizer: Any substance that induces a progressively amplified response following continuous or repeated doses of that substance.

Eutrophication. is the unsustainable plant/algae growth and oxygen starvation of lakes and waterways typically due to increase in nitrogen and phosphorus levels

Fragrance: Organic substances that are added primarily for aesthetic reasons to give smell, or the purpose of concealing smells, from other ingredients or from the item to be cleaned.

HSNO Act: hazardous Substances and New Organisms Act 1996

Ingredient: Any constituent of a product that is intentionally added or known to be a contaminant that comprises at least 0.01% by weight of the product.

ISO means the International Organisation for Standardization.

Mutagenic means any substance that causes mutations or genetic abnormalities. The criteria for classification of a substance as mutagenic are defined by the National Industry Chemical Notification and Assessment Scheme (NICNAS).

OECD means Organisation for Economic Co-operation and Development.

Optical brighteners: Additives designed to enhance the appearance of colors and whiteness in materials by absorbing ultraviolet radiation and emitting blue radiation. (Also known as fluorescent whitening agents).

Phosphates: Any salts of phosphorous oxyacids , generally but not exclusively from phosphoric acid

Primary packaging: This packaging is the material physically containing and coming into contact with the product, not including the cap or lid of a bottle.

Product as used: This is the most concentrated form of the product that the manufacturer recommends for a product's intended use.

Recyclable package: This package can be diverted from the waste stream through available processes and programs, and can be collected, processed, and returned to use in the form of raw materials or products.

Solvent: A general term for a chemically diverse range of liquid phase substances which dissolve other materials.

Surfactant or "surface-active agent": Any substance which is intended to reduce surface tension thereby helping water to surround and remove dirt or staining from surfaces.

VOC, or Volatile Organic Compound: Any organic compound having a vapour pressure of 0.01 kPa or more, at 20 °C, or having a corresponding volatility under the particular conditions of use.

Environmental Criteria

Biodegradation

Readily Biodegradable surfactants are those which are

- (1) Classified as aerobically biodegradable in the Detergent Ingredient Database of the European Union in the most up-to-date version (currently January 2007), or,
- (2) Meet the test requirements of the OECD "Methods for the Determination of Biodegradability of Surfactants in Synthetic Detergents" which are mirrored in the ISO standard 14593:1999 and defined in the European Union Regulation on Detergents No 648/2004.
 - (2A) A surfactant will be considered biodegradable if the level of biodegradability as measured according to one of the following tests, is at least 60% within 28 days:
 - OECD 310 (CO₂ Headspace test),
 - OECD 301B (CO₂ evolution modified Sturm test),
 - OECD 301D (closed bottle test)
 - OECD 301F (manometric respirometry),
 - OECD 301C (MITI test).
 - (2B) Alternatively, biodegradability as measured, according to one of the following tests, is at least 70% within 28 days:
 - OECD 301A (dissolved CO₂ die-away test),
 - OECD 301E (screening-DOC die-away test).

Assessment of these criteria will be through the surfactant supplier's published Safety Data Sheet.

Aquatic toxicity

The product as used shall not be toxic to aquatic life.

Under HSNO the concentrate product shall not be ecotoxic to Aquatic life as per subclasses 9.1A, 9.1B.

Photochemical Smog, Tropospheric Ozone Production, and Indoor Air Quality

The product as used shall not contain substances that contribute significantly to the production of photochemical smog, tropospheric ozone, or poor indoor-air quality. VOC emissions will comply with formulation standards specified by the USA environmental Protection Agency 40 CFR Ch.I (7-1-07 Edition)

Eutrophication

The product as used shall not contain more than 0.5% by weight of elemental phosphorous.

Product Health Characteristics

Product toxicity and hazard profiles must conform with HSNO classifications as specified below:-

Toxic Compounds

The product in concentrate form shall not have a 6.1 A or B under the HSNO Act.

Carcinogenic, Reproductive, Systemic & mutagenesis compounds

The product in concentrate form shall not be classified under HSNO regulations as:

Sub Class 6.6 (Mutagenic)

Subclass 6.7 (Carcinogenic)

Subclass 6.8 (Reproductive/developmental toxicants)

Subclass 6.9A (Target organ systemic toxicants)

Respiratory and Dermal Sensitization

The product in concentrate form shall not be classified under HSNO regulations as:

Subclass 6.5 (Sensitizers)

Skin & Eye Corrosive

The product in concentrate form shall not be classified under HSNO regulations as:

Subclass 8.1A (Metal corrosive),

Subclasses 8.2B & 8.2C (skin corrosive)

Flammable

The product in concentrate form shall not be classified under HSNO regulations as:

Subclasses 3.1A, 3.1B, 3.1C (flammable)

Oxidizing

The product in concentrate form shall not be classified under HSNO regulations as:

Class 5 (Oxidizing)

Formulation Criteria

Fitness for Purpose

Products should be good performers in their intended application. The manufacturer must ensure that the product is fit for its intended purpose

Cold water Performance

Each product *as used* when diluted with water from the cold tap at no more than 20 °C, shall clean common soils and surfaces in its category effectively.

Sustainability

Where possible products will be formulated using raw materials from non-petrochemical sustainable sources.

Surfactants

Surfactants must conform to biodegradation standards as specified in the Environmental Criteria section.

Solvents

Cleaner concentrates must not contain more than 10 % by mass volatile organic compounds (VOC).

Biocides & Preservatives

Products may only include biocides in order to preserve the product and in the appropriate dosage for this purpose alone. The criterion does not apply to ingredients added for other functions but which may also have anti-bacterial properties.

Fragrances

Fragrances must be produced and used in accordance with the "Code of Practice" compiled by the International Fragrance Association (IFRA). Fragrance ingredients added for functions other than smell must also comply with all other requirements.

Colouring Agents (Dyes & Pigments)

Colouring agents are acceptable if they have a signaling /health & safety function. Only Colouring Agents that have been approved as a food additive or comply with HSNO Cosmetic Group standards can be used.

Prohibited Ingredients

The following products are prohibited from use:-

Chelating Agents - Ethylene diamine-tetra-acetic acid.

NTA -nitrilotriacetic acid or any of its salts.

Reactive chlorine compounds (e.g. sodium hypochlorite)

Organic compounds carriers of chlorine (e.g. triclosan).

Quaternary ammonium salts that are not readily biodegradable.

Alkylphenol ethoxylates

Ethylene glycol ethers

Chlorinated solvents

Optical Brighteners

Heavy Metals including arsenic, lead , cadmium, cobalt, chromium , mercury, nickel, or selenium

Packaging Criteria

Recyclable

Plastics must be able to be recycled in New Zealand and must be marked with the appropriate resin identification.

Packaging must not be impregnated, labeled, coated or otherwise treated in a manner, which would prevent recycling (e.g., reinforced sleeves, metallic labels).

Labels should be recyclable or constructed with semi-permanent adhesive so they can be easily removed to allow the container to be recycled. Labels shall meet HSNO labeling standards for durability and fitness for purpose.

Cardboard packaging should preferably have a recycled content or be supplied in a form that allows reuse or recycling.

Label Content

Labels shall be in a format as specified under the HSNO Act 1996.

Products must be accompanied by instructions for proper use as to maximize product performance and minimise waste. These instructions shall include information on reuse, recycling and/or correct disposal of packaging.

The following words or equivalent words must be clearly displayed on the packaging.

All cleaners have an effect on the environment. Always use the correct dose for maximum efficiency and minimum environmental impact.

No claim or suggestion on the packaging or by any other means shall be made that the product has an antimicrobial action.

The label will include instructions for the proper dilution, use, disposal of the product and the use of equipment, as well as recommended personal protection equipment for each stage of the products use.

Appropriate hazard pictograms must also be included on the label where necessary.

The recommended dosage and dilution rates at a normal level of soiling/normal use must be stated clearly on the primary packaging.

Product Support

Safety Data Sheets

Each product shall have a HSNO compliant MSDS supplied with it when purchased for the first time and supplied on request when requested by any third party.

24 Hour Safety Data Support

All Safety data Sheets will be supplied to the National Poisons centre and updated on a regular basis

Applicator labeling

Where products are diluted or decanted into a container for application by the end user suitable labeling or packaging will be made available so the product is clearly identifiable.