

CRITERIA FOR EnviroLine™ PRODUCTS

The EnviroLine™ of products are developed based on the criteria outlined by the major environmental agency registries.

The raw materials / constituents - used in the formulations must all meet the following biodegradability standards - all surfactants must pass the threshold level of 60% mineralization in the prescribed test in 28 days (ie., $\geq 60\%$ Th_{OD}/Th_{CO2} ($\geq 70\%$ DOC) in 28 days, without forming degradation products of concern.

No formulation can be considered in the EnviroLine™ unless all the surfactants meet this standard.

In addition to the biodegradability of the raw materials there are a number of other criteria that must be met, including the fact that the product must also be effective for the purpose it was designed.

Other General Criteria for Hard Surface Cleaners:

- a) must not be formulated with solvents belonging to the following groups:
 - i aromatic solvents
 - ii halogenated solvents
 - iii ethylene glycol monomethyl ether / methoxyethanol
ethylene glycol monoethyl ether / ethoxyethanol
ethylene glycol monobutyl ether / butoxyethanol
ethylene glycol monopropyl ether / propoxyethanol
- b) must not be formulated with alkylphenol ethoxylates - including nonylphenol, octylphenol and their ethoxylates
- c) must not be formulated with
 - i phosphates
 - ii EDTA, EDNTA, NTA or salts of these compounds
- d) must not contain more than 1% by weight of volatile organic compounds – after dilution or more than 12% by weight of organic volatile compounds as sold ie in its concentrated form
- e) have an ozone depleting potential of zero

- f) must not be formulated with any chemicals that are included in the International Agency for Research on Cancer (IARC) lists for proven (Group 1), probable (Group 2A) or possible (Group 2B) carcinogens
- g) must not be formulated with any chemicals identified as priority for research by the European Union as endocrine disruptors
- h) must not be formulated with toxic metals, including but not limited to arsenic, cadmium, chromium, lead, silver and mercury
- i) must not have pH lower than 3.0 and not higher than 11.0, unless other wise specified for certain applications
- j) must not have a flash point lower than 61°C
- k) must have a maximum temperature of usage which is at least 17°C below the flash point
- l) the product must have a limited effect on aquatic life, based on the whole formulation short term sensitivity toxicity testing of the recommended dose. In lieu of such data, evidence on the limited toxicity of individual ingredients on a number of aquatic organisms, may be accepted.
- m) be readily biodegradable under aerobic conditions as determined by whole formulation testing. In lieu of such data, evidence on the ready biodegradability of each component will be accepted if constant tests have been applied for each component
- n) must not be formulated with organic ingredients that are bio-accumulating
- o) packaging is reusable or recyclable, bulk containers are used and product is sold in a concentrated form

SPECIFIC CRITERIA FOR PRODUCT TYPES

In addition to the above listed criteria there are others that are relevant to certain types of hard surface cleaners based on their application. These are outlined below:

Window and Glass Cleaner

- i) must not contain more than 3% by weight of volatile organic compounds as used (eg. after dilution if applicable)
- ii) must not contain more than 25% by weight of volatile organic compounds as sold (eg. in the concentrated form if applicable)
- iii) must not be formulated with ammonia or ammonium compounds
- iv) based on recommended doses, have a calculated oral rat toxicity LD50 >10,000 mg/kg, where each ingredient has been tested according to OECD guidelines for acute mammalian toxicity testing

Degreasers

- i) if sold to the institutional market, must not have a pH greater than 12.5
- ii) must not contain more than 3% by weight of volatile organic compounds as used (eg. after dilution if applicable)
- iii) must not contain more than 25% by weight of volatile organic compounds as sold (eg. in the concentrated form if applicable)
- iv) if advertised for use in drains then not adversely affect biologically-based drain cleaners (eg. not containing antimicrobial compounds such as formaldehyde or bleach)

Industrial Cleaners

- i) must have a pH above 2.00 and below 12.5
- ii) must not contain more than 5% by weight of volatile organic compounds as used (eg. after dilution if applicable)
- iii) must not contain more than 25% by weight of volatile organic compounds as sold (eg. in the concentrated form if applicable)
- iv) must have clear instructions for disposal of waste product and materials contaminated with the degreaser

Bathroom Cleaners

- i) must not have a pH lower than 2.0 and not higher than 12.0, as measured in the concentrate, unless it can be demonstrated that the product is not corrosive
- ii) must not contain more than 25% by weight of volatile organic compounds as sold (eg. in the concentrated form if applicable)
- iii) must not be formulated with sodium or calcium hypochlorite (eg. Bleach)
- iv) must not be formulated with quaternary ammonium compounds

CRITERIA FOR HAND CLEANERS

- i) the product must work
- ii) the product must not be formulated with or be a sensitiser or a skin irritant
- iii) make no disinfecting, antiseptic or sanitising claims
- iv) must not be formulated with phosphates
- v) must not be formulated with NTA or EDTA
- vi) must not be formulated with alkylphenol ethoxylates – including nonylphenol, octylphenol and their ethoxylates
- vii) must not be formulated with halogenated organic solvents
- viii) must not be formulated with butoxy-ethanol
- ix) must not contain volatile organic compounds in excess of 1% by weight for institutional hand cleaners and 8% by weight for industrial heavy duty hand cleaners
- x) must not be formulated with any chemicals that are included in the international Agency for Research on Cancer (IARC) lists for proven (Group 1), probable (Group 2A) or possible (Group 2B) carcinogens

CRITERIA FOR COMMERCIAL VEHICLE WASH PRODUCTS

- i) the product must be inherently biodegradable as determined by whole formulation testing, or in lieu of such data, evidence on the ready biodegradability of each component will be accepted if constant tests have been applied for each component
- ii) must not have a pH lower than 4.5 or higher than 13.5
- iii) must not be formulated with any of the following:
 - formaldehyde
 - halogenated hydrocarbons
 - aromatic hydrocarbons
 - ozone depleting substances
 - butoxy-ethanol
 - more than 5% NTA including any of its salts by weight
 - more than 1% free potassium hydroxide or sodium hydroxide by weight
 - alkylphenol ethoxylates – including nonylphenol, octylphenol and their ethoxylates