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Safety Data Sheet Enzyme Bowl Cleaner

1. IDENTIFICATION

Synonyms none
 CAS# see list in Part 3
 Material Use enzyme-assisted toilet bowl cleaner

IN AN EMERGENCY CALL: INFOTRAC 1-800-535-5053

2. HAZARD IDENTIFICATION

GHS Class (Category)	skin irritant (3)	eye irritant (2A)
Signal Words	WARNING no Pictogram	WARNING
Hazard Statements	causes mild skin irritation (H316)	causes serious eye irritation (H319)



GHS Precautionary Statements for Labeling

P262 Do not get in eyes, on skin or on clothing.
 P264 Wash thoroughly after handling.
 P280 Wear protective gloves of rubber.

3. COMPOSITION

	CAS NUMBER	%	TLV ppm / mg/m ³	LD ₅₀ (mg/kg) ORAL	LD ₅₀ (mg/kg) SKIN	LC ₅₀ ppm INHALATION
Mixture containing non-pathogenic bacteria*	none**	5-10%	not listed	not known	not known	not known
Alkylbenzenesulfonic Acid	on request	5-10%	not listed	above 500	not known	not known
Nonionic Surfactant	on request	0-1%	not listed	>2000	not known	not known
Citric Acid	77-92-9	0-1%	not listed	3000	not known	not known
Water	7732-18-5	balance	not toxic	90,000	not toxic	not toxic

* **NOTE:** These bacteria are five non-pathogenic species; they cannot infect humans or even other animals.

** **NOTE:** The Chemical Abstracts Service (CAS) only assigns CAS numbers to "substances", not to mixtures or suspensions of bacteria.

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4. FIRST AID

- SKIN:** Wash with plenty of water. Remove contaminated clothing and do not reuse until laundered. Seek medical help promptly if there is persistent itching or redness in the affected area.
- EYES:** Wash eyes with plenty of water, holding eyelids open. Seek medical assistance promptly if irritation occurs.
- INHALATION:** Remove from contaminated area promptly. **CAUTION: Rescuer must not endanger himself!** If victim's breathing stops, administer artificial respiration and seek medical aid promptly.
- INGESTION:** Give plenty of water to dilute product. Do not induce vomiting (NOTE below). Keep victim quiet. If vomiting occurs, lower victim's head below hips to prevent inhalation of vomited material. Seek medical help promptly.

NOTE: Inadvertent inhalation of vomited material may seriously damage the lungs. The danger of this is greater than the risk of poisoning through absorption of this relatively low-toxicity product. The stomach should only be emptied under medical supervision, after the installation of an airway to protect the lungs.

5. FLAMMABILITY & FIRE-FIGHTING

- | | |
|--------------------------|--|
| Flash Point | cannot burn |
| Autoignition Temperature | cannot burn |
| Flammable Limits | cannot burn |
| Combustion Products | carbon monoxide, nitrogen oxides, sulphur oxides, smoke, part oxidised hydrocarbon fragments |
| Firefighting Precautions | as for materials sustaining fire; firefighters must wear SCBA |
| Static Discharge | cannot accumulate a static charge |

6. ACCIDENTAL RELEASE MEASURES

- Leak Precaution** dike to control spillage and prevent environmental contamination
- Handling Spill** recover free liquid with suitable pumps; absorb residue on an inert sorbent, sweep, shovel & store in closed containers for disposal

7. HANDLING & STORAGE

Store and use in a cool environment. Always replace drum, pail or IBC cap/closure prior to moving the container!

Avoid generating or breathing product mist. If mist forms in use, install adequate ventilation to clear workplace air.

Avoid prolonged contact with skin. Wash work clothes frequently. An eye bath should be available near the workplace.

8. EXPOSURE CONTROL & PERSONAL PROTECTION

- | | | | |
|-------------|---|------------|------------|
| ACGIH TLV | not listed | ACGIH STEL | not listed |
| OSHA PEL | not listed | OSHA STEL | not listed |
| Ventilation | no special mechanical ventilation required | | |
| Hands | rubber gloves – <i>other types also protect, always confirm suitability with supplier</i> | | |
| Eyes | safety glasses with side shields – <i>always protect eyes!</i> | | |
| Clothing | no special protective clothing required | | |

9. PHYSICAL AND CHEMICAL PROPERTIES

- | | |
|---|---|
| Odor & Appearance | clear, colorless, liquid with floral odor |
| Odor Threshold | not known |
| Vapor Pressure | as for water |
| Evaporation Rate (<i>Butyl Acetate = 1</i>) | as for water |
| Vapor Density (<i>air = 1</i>) | 0.6 (<i>water</i>) |
| Boiling Point | slightly above 100°C / 212°F |
| Freezing Point | slightly below 0°C / 32°F |
| Specific Gravity | 1.00-1.01 (20/20°C) |
| Water Solubility | complete |
| Viscosity | not known – <i>mobile liquid</i> |
| pH | <2 – <i>strongly acidic</i> |

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10. REACTIVITY

Dangerously Reactive With	none known
Also Reactive With	strong acids or strong alkalis
Chemical Stability	stable; will not polymerize
Decomposes in Presence of	no decomposition conditions known
Decomposition Products	none apart from Hazardous Combustion Products
Mechanical Impact	not sensitive

11. TOXICITY INFORMATION**i. ACUTE EXPOSURE**

Skin Contact	may irritate skin causing redness if contact is prolonged
Skin Absorption	yes, slowly; toxic effects unlikely by this route
Eye Contact	severely irritating to eyes
Inhalation	product mist is irritating to respiratory system
Ingestion	may irritate mouth, throat & stomach; may cause stomach pain, nausea & diarrhoea

ii. CHRONIC EXPOSURE

General	prolonged or repeated exposure may cause dermatitis
Sensitizing	not a sensitizer <i>The bacterial mixture has the potential to be sensitizing although there have been no reports of sensitization.</i>
Carcinogen/Tumorigen	not known to be a tumorigen or a carcinogen in humans or animals
Reproductive Effect	no known effect on humans or animals
Mutagen	not known to be a mutagen or teratogen in humans or animals
Synergistic With	not known
Calculated LD ₅₀ (oral)	5375mg/kg (rat)
LD ₅₀ (skin)	no data available
LC ₅₀ (inhalation)	no data available

12. ECOLOGICAL INFORMATION**Alkylbenzenesulfonic Acid:**

Bioaccumulation	not a bioaccumulator
Biodegradation	biodegrades readily & rapidly in the presence of oxygen & industrial waste sludge; 90% in 4-5 days reported; <i>far slower rates seen if adsorption to soil competes with bacterial degradation</i>
Abiotic Degradation	reacts with atmospheric hydroxyl radicals; estimated ½-life in air is 8 hours
Mobility in soil, water	water soluble; may move readily in soil & water; <i>adsorption to soil may immobilise this substance</i>

Aquatic Toxicity

LC ₅₀ (Fish, 96hr)	3.5-10mg/litre (Brachidanio rerio), 3.2-5.6mg/litre (Salmo gairdneri), 5-6mg/litre (Capitella capitata) 7mg/litre (Rita rita), 5.6mg/litre (Scoleleptis fuliginosa), 2.6mg/litre (Leuciscus idus) & others
EC ₅₀ (Crustacea, 24hr)	5.9mg/litre (Daphnia magna)
EC ₅₀ (Algae)	29mg/litre (Selenastrum capricornutum)
EC ₅₀ (Bacteria)	50mg/litre (Haematococcus pluvialis, 4 hr)

Nonionic Surfactant:

Bioaccumulation	does not appear to bioaccumulate; <i>however, the breakdown product, unethoxylated nonylphenol, is poorly water soluble and may accumulate</i>
Biodegradation	biodegrades readily in the presence of oxygen; 34% biodegradation in 20 days yielding di- and mono-ethoxylate; <i>these latter compounds resist further biodegradation (below)</i>
Abiotic Degradation	not known
Mobility in soil, water	sufficiently water soluble to move readily through soil and the water column

Aquatic Toxicity

LC ₅₀ (Fish, 96 hr)	2.1-2.6mg/litre (Pimephelas promelas), 13.9-19.5mg/litre (Poecilia reticulata – 48hr)
LC ₅₀ (Crustacea, 48hr)	3.8-6.2 & 18.2mg/litre (Daphnia magna), 20.9mg/litre (Gammarus pulex)
EC ₅₀ (Algae, 96hr)	15mg/litre (Lemna minor), 7mg/litre (Scenedesmus quadricauda)

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12. ECOLOGICAL INFORMATION, cont'd

Citric Acid:

Bioaccumulation	rapidly metabolized by all living (plant or animal) tissue; cannot bioaccumulate
Biodegradation	biodegrades readily & rapidly in the presence of oxygen; various results available from 85% in 24 hours to 100% in 19 days
Abiotic Degradation	reacts with atmospheric hydroxyl radicals; estimated ½-life in air is 55hr
Mobility in soil, water	water soluble; moves readily in soil and water

Aquatic Toxicity

LC ₅₀ (Fish, 96hr)	1516mg/litre (Lepomis macrochirus), 440-760mg/litre (Leuciscus idus)
EC ₅₀ (Crustacea, 72hr)	120mg/litre (Daphnia magna)
EC ₃ (Algae, 7 day)	640mg/litre (Scenedesmus quadricauda) – <i>This is an EC₃ not an EC₅₀!</i>
EC ₅₀ (Bacteria)	>10,000mg/litre (Pseudomonas putida)

Bacterial Mix:

There is no ecological information available on the bacterial mix.

13. DISPOSAL CONSIDERATIONS

Waste Disposal	do not flush undiluted to sewer; may be incinerated in approved facility with flue gas monitoring & scrubbing, mix with a suitable flammable waste before incineration; may be landfilled if local regulations permit
Containers	Drums should be reused. Recondition and pressure test by a licensed reconditioner prior to re-use. Pails must be vented and thoroughly dried prior to crushing and recycling. IBCs (intermediate bulk containers): polyethylene bottle must be pressure tested & recertified at 30 months. Replace at 60 months (5 years). Steel containers must be inspected, pressure tested & recertified every 5 years. <i>Warning: never cut, drill, weld or grind on or near this container, even if empty.</i>

14. TRANSPORT INFORMATION

USA 49 CFR & Canada/International TDG

Product Identification Number	UN – not regulated for transport
Shipping Name	not regulated for transport
Classification	not regulated for transport
Marine Pollution	not a marine pollutant
ERAP Required	No

15. REGULATIONS

Canada DSL	on inventory
U.S.A. TSCA	on inventory
Europe EINECS	on inventory

16. OTHER INFORMATION

Date of Preparation September 2014

Date of Revision -

Prepared for Tomco-Harwel, by **Peter Bursztyn**

With data from the Registry of Toxic Effects of Chemical Substances (RTECS), Hazardous Substance Data Base (HSDB), Cheminfo (CCOHS), OSHA, IUCLID Datasheets (European Chemical Substance Information System - ESIS), & others sources (below if used), as required/available

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