8155 E. 46th St. Tulsa, OK 74145 | **888.313.8173**

Safety Data Sheet
Restoration

1. IDENTIFICATION

Synonyms **none**
CAS#
Material Use **liquid cleaning formula**

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

2. HAZARD IDENTIFICATION

GHS Class	***skin corrosive***	***eye irritation***
(Category)	***(2)***	***(2)***
Signal Words	***WARNING***	***WARNING***
Hazard Statements	*causes skin Irritation (H315)*	*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.**
P270	**Do not eat, drink or smoke when using this product.**
P280	**Wear eye protection, protective gloves and clothing of rubber, neoprene or butyl.**
P313 & P333	**If skin irritation or rash occurs, get medical advice/attention.**

3. COMPOSITION

	CAS NUMBER	%	TLV ppm / mg/m^3	LD_{50} (*mg/kg*) ORAL	LD_{50} (mg/kg) SKIN	LC_{50} ppm INHALATION
2-Butoxyethanol	111-76-2	1-5%	20/100 (skin)	>300	>450	>450
Amphoteric Surfactant (a)	*on request*	1-5%	not listed	not known	not known	not known
Amphoteric Surfactant (b)	*on request*	<1%	not listed	>4900	not known	not known
Sodium Hydroxide	1310-73-2	<1%	2mg/m^3	over 500	1350	not known
Sodium Metasilicate (*pentahydrate*)	6834-92-0	<1%	not listed	850	not known	not known
Sodium Tripentaphosphate	7758-29-4	<1%	not listed	>3120	>4640	>>390
Anionic Surfactant	*on request*	<1%	not listed	>7200	>2000	not known
Water	7732-18-5	balance	not toxic	90,000	not toxic	not toxic

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4. FIRST AID

SKIN: Wash with plenty of water. Remove contaminated clothing and do not reuse until thoroughly 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 persists.

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	oxides of carbon, nitrogen & phosphorous, part oxidized hydrocarbon fragments
Firefighting Precautions	as for materials sustaining fire; compatible with water; firefighters must wear SCBA
Static Discharge	cannot accumulate a static charge

6. ACCIDENTAL RELEASE MEASURES

Leak Precaution	dyke 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 away from strong acids, strong alkalis and oxidising agents. Never cut, drill, weld or grind on or near this container, whether empty or full. Always replace drum, pail or IBC cap prior to moving the container!

Avoid generating or breathing product vapour or mist. If mist or vapour form in use, ensure adequate ventilation to maintain airborne concentration of the product below the TLV (*see Part 8, below*).

Avoid prolonged contact with skin & wash work clothes frequently. An eye bath and safety shower should be available near the workplace.

8. EXPOSURE CONTROL & PERSONAL PROTECTION

2-Butoxyethanol:

ACGIH TLV	20ppm / 96mg/m^3 (skin)	ACGIH STEL	not listed
OSHA PEL	50ppm / 240mg/m^3 (skin)	OSHA STEL	not listed

Sodium Hydroxide:

ACGIH TLV-C	2mg/m^3	ACGIH STEL	not listed
OSHA PEL-C (T)	2mg/m^3	OSHA STEL	not listed

Ventilation	no special mechanical ventilation required
Hands	natural rubber or neoprene or butyl gloves are recommended – *always confirm suitability with supplier*
Eyes	safety glasses with side shields or chemical goggles – *always protect eyes!*
Clothing	no special protective clothing required

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9. PHYSICAL AND CHEMICAL PROPERTIES

Odor & Appearance	clear, colorless, liquid with slight "bland" odor
Odor Threshold	not known – *nearly odorless*
Vapor Pressure	as for water
Evaporation Rate (*Butyl Acetate = 1*)	as for water
Vapour Density (air = 1)	0.6 (*water*), 4.1 (*2-butoxyethanol*)
Boiling Point	slightly above 100°C / 212°F
Freezing Point	slightly below 0°C / 32°F
Specific Gravity	1.0-1.1 (20/20°C)
Water Solubility	complete
Viscosity	not known – *thin mobile liquid*
pH	12.4

10. REACTIVITY

Dangerously Reactive With	none known
Also Reactive With	strong acids, strong oxidizing agents; may corrode aluminum
Chemical Stability	stable; will not polymerize
Decomposes in Presence of	no decomposition initiator known
Decomposition Products	none apart from Hazardous Combustion Products
Mechanical Impact	not sensitive

11. TOXICITY INFORMATION

i. *ACUTE EXPOSURE*

Skin Contact	irritating; corrosive if contact is prolonged
Skin Absorption	yes, slowly; toxic effects unlikely by this route
Eye Contact	corrosive to eyes; permanent damage possible
Inhalation	product mist likely to irritate the respiratory system
Ingestion	irritating, possibly corrosive to mouth, throat & stomach

ii. *CHRONIC EXPOSURE*

General	prolonged or repeated exposure to dilute material may cause dermatitis
Sensitizing	not a sensitizer
Carcinogen/Tumorigen	not known as a tumorigen or a carcinogen in humans; 2-butoxyethanol is an animal carcinogen (A 3)
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)	9280mg/kg (rat)
Calculated LD_{50} (skin)	15,480mg/kg (rabbit)
LC_{50} (inhalation)	*insufficient information to calculate*

12. ECOLOGICAL INFORMATION

2-Butoxyethanol:

Bioaccumulation	rapidly eliminated from the body, cannot bioaccumulate; biological ½-life <48hr
Biodegradation	biodegrades readily & rapidly in the presence of oxygen; 75%-100% in 20-28 days
Abiotic Degradation	reacts with atmospheric hydroxyl radicals; estimated ½-life in air 16 hours
Mobility in soil, water	water soluble; moves readily & rapidly in soil and water
Aquatic Toxicity	
LC_{50} (Fish, 96hr)	1490 & 2950mg/liter (Lepomis macrochirus), 1250mg/liter (Menidia beryllina),
EC_{50} (Crustacea, 24hr)	1700-1940 & 5000mg/liter (Daphnia magna), 600-1000mg/liter (Crangon crangon, 48hr)
EC_{50} (Algae)	35mg/liter (Microcistis aeruginosa), 900mg/liter (Scenedesmus quadricauda)
EC_{50} (Bacteria)	911mg/liter (Chilomonas paramecium), 700mg/liter (Pseudomonas putida)

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12. ECOLOGICAL INFORMATION, cont'd

Amphoteric Surfactant (a):

Bioaccumulation	water soluble; cannot bioaccumulate
Biodegradation	biodegrades readily & rapidly in the presence of oxygen; 84% in 20 days, 97% & 100% in 28 days
Abiotic Degradation	estimated ½-life in air is unknown
Mobility in soil, water	water soluble; moves readily in soil and water
Aquatic Toxicity	
LC_{50} (Fish, 96hr)	1.8, 2, 6.7 & 10mg/liter (Brachydanio rerio)
EC_{50} (Crustacea, 48hr)	1.9, 6.5 & 21.7mg/liter (Daphnia magna)
EC_{50} (Algae)	1.8, 2.4 & 30mg/liter (Scenedesmus subspicatus)
EC_0 (Bacteria)	>10,000mg/liter (Pseudomonas putida)

Amphoteric surfactant (b):

Bioaccumulation	not known
Biodegradation	not readily biodegradable
Abiotic Degradation	not known
Mobility in soil, water	water soluble; moves readily through soil & the water column
Aquatic Toxicity	***no actual aquatic toxicity data available – said (by two manufacturers) to be harmless to aquatic life***

Sodium Hydroxide:

Bioaccumulation	not a bioaccumulator
Biodegradation	inorganic product – cannot biodegrade
Abiotic Degradation	*not applicable in this formulation*
Mobility in soil, water	water soluble; moves readily in soil and water
Aquatic Toxicity	
LC_{50} (Fish 96 hr)	125mg/liter (Gambusia affinis), 45mg/liter (Oncorhynchus mykiss) – *mortality caused by alkalinity*
LC_{100} (Crustacea, 48hr)	100-150mg/liter (Daphnia magna); 125-1000mg/liter (freshwater insect larvae)
EC_{50} (Algae)	*no information*
EC_{50} (Bacteria)	22mg/liter (Photobacterium phosphoreum)

Sodium Metasilicate pentahydrate:

Bioaccumulation	not a bioaccumulator
Biodegradation	inorganic product – does not biodegrade
Abiotic Degradation	water-soluble substance, dilutes readily in the environment; combines with metal ions to form insoluble calcium. aluminum, magnesium & iron silicates similar to naturally occurring silicates
Mobility in soil, water	water soluble; moves readily in soil and water
Aquatic Toxicity	
LC_{50} (Fish, 96hr)	365mg/liter (Brachydanio rerio), 4037mg/liter (Gambusia affinis)
EC_{50} (Crustacea, 96hr)	376mg/liter (Daphnia magna), 1100mg/liter (Lymnia sp.), 278mg/liter (Hyallela sp.)
EC_{50} (Algae)	no data
EC_0 (Bacteria)	>1740mg/liter (Pseudomonas putida) – *this is an LC_0 – no inhibition at this dose*

SodiumTripentaphosphate:

Bioaccumulation	water soluble – cannot bioaccumulate
Biodegradation	cannot biodegrade; plants will use it as a fertilizer (*phosphate ion*), removing it from the environment
Abiotic Degradation	gradual (faster in acidic medium) hydrolysis to orthophosphate (coupled to various metal ions, most of which precipitate out of solution)
Mobility in soil, water	water soluble, may move readily through soil & the water column; *phosphate precipitates with Mg^{++} & Ca^{++}*
Environmental	not toxic to marine life but promotes algal blooms on surface water & eventual eutrophication
Aquatic Toxicity	
LC_{50} (Fish, 48hr)	1600mg/liter (Leuciscus idus), >1850mg/liter (Pimepherlas promelas – *24 hr*)
EC_{50} (Crustacea, 50hr)	1089mg/liter (Daphnia magna), >50mg/liter (Lepadella patella), 277mg/liter (Cladoceran dubia)[1]
EC_{50} (Algae, 72hr)	160 & 69mg/liter (Desmodesmus subspicatus)[1], >900mg/liter (Skeletonema costatum)[1]
EC_{50} (Bacteria)	1000mg/liter (*domestic activated sludge*)

Anionic Surfactant:

Bioaccumulation	not a bioaccumulator
Biodegradation	biodegrades readily & rapidly in the presence of oxygen; 69% in 5 days, 84%-88% in 28 day
Abiotic Degradation	photodegradation occurs; estimated ½-life in air is ~40hr
Mobility in soil, water	water soluble; moves readily in soil and water
Aquatic Toxicity	
LC_{50} (Fish, 96hr)	400mg/liter (Onchorhunchus mykiss), 408mg/liter (Pimephales promelas)
EC_{50} (Crustacea, 24hr)	400 & 408mg/liter (Daphnia magna)
EC_{50} (Algae)	230mg/liter (Selenastrum capricornutum)
EC_{50} (Bacteria)	not known – *rapid biodegradability suggests low level of harm to bacteria*

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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.
Warning: never cut, drill, weld or grind on or near this container, even if empty.

14. TRANSPORT INFORMATION

USA 49 CFR & Canada/International TDG

Product Identification Number	**Not regulated**
Shipping Name	
Classification	
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	**March 2015**
Date of Revision	**-**

Prepared for PCS

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

last page of SDS

PLEASE ENSURE THAT THIS SDS IS GIVEN TO, AND EXPLAINED TO PEOPLE USING THIS PRODUCT.

EMERGENCY INFORMATION: INFOTRAC 1-800-535-5053