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Safety Data Sheet Big D Descaler

1. IDENTIFICATION

Synonyms none
 CAS# see list in Part 3, below
 Material Use scale remover

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

2. HAZARD IDENTIFICATION

GHS Class (Category)	<i>skin corrosive (1)</i>	<i>STOT (3)</i>	<i>metal corrosive (1)</i>
Signal Words	DANGER	WARNING	WARNING
Hazard Statements	<i>causes severe skin burns & eye damage (H314)</i>	<i>causes respiratory tract irritation (H335)</i>	<i>corrosive to metals (H290)</i>



GHS Precautionary Statements for Labeling

P234 Keep only in original container.
 P260 P262 Do not breathe mists. Do not get in eyes, on skin or on clothing.
 P264 P280 Wash thoroughly after handling. Wear eye protection, protective gloves and clothing of butyl or neoprene.
 P313 & P333 If skin irritation or rash occurs, get medical advice/attention.

3. COMPOSITION

	CAS NUMBER	%	TLV mg/m ³	LD ₅₀ (mg/kg) ORAL	LD ₅₀ (mg/kg) SKIN	LC ₅₀ ppm INHALATION
Phosphoric Acid	7664-38-2	10-20%	1	1250	1260	25.5
Hydrochloric Acid	7647-01-1	<5%	3	>240	>5000	320
Non-ionic Surfactant	not known	<1%	not listed	>2000	not known	not known
Water	7732-18-5	balance	not toxic	90,000	not known	not known

4. FIRST AID

SKIN: Wash with plenty of water. Remove contaminated clothing and do not reuse until thoroughly cleaned or 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: Corrosive substance: apply first aid immediately! Inadvertent inhalation of vomited material may seriously damage the lungs. The stomach should only be emptied under medical supervision, after the installation of an airway to protect the lungs.

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5. FLAMMABILITY & FIRE-FIGHTING

Flash Point	cannot burn
Autoignition Temperature	cannot burn
Flammable Limits	cannot burn
Combustion Products	oxides of: carbon, nitrogen & phosphorous; hydrogen chloride gas & chlorine
Firefighting Precautions	as for materials sustaining fire; water (fog or spray) is compatible; 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	ventilate contaminated area; recover free liquid with corrosion-resistant pumps; neutralize residue with soda ash, crushed limestone, cement powder or sodium bicarbonate, absorb on an inert sorbent, sweep & pick up using a plastic shovel, & store in closed containers for recycling or disposal

7. HANDLING & STORAGE

This product is corrosive. Use with care on all metals except resistant grades of stainless steel. Store in original containers, away from substances listed in Part 10 (below). Ensure that containers, empty or full, are tightly sealed unless in use. Inspect containers regularly for damage and/or leakage.

Use corrosion resistant pumps & hoses for product handling. For preference, use special self-closing containers for transfer. Always transfer the smallest amount you are likely to need.

Avoid creating product mist, fume or vapor. If mist, fume or vapor forms in use, install adequate exhaust ventilation.

Never cut, drill, weld or grind on or near this container. Avoid all contact with skin by wearing appropriate resistant clothing, and wash work clothes frequently. An eye bath and safety shower must be available near the workplace.

<<< Keep soda ash, crushed limestone, cement powder or sodium bicarbonate on hand to neutralize any spilled material. >>>

8. EXPOSURE CONTROL & PERSONAL PROTECTION

Phosphoric Acid:

ACGIH TLV	1mg/m ³	ACGIH STEL	3mg/m ³
OSHA PEL	1mg/m ³	OSHA STEL	3mg/m ³

Hydrochloric Acid:

ACGIH TLV-C	2ppm / 3mg/m ³	ACGIH STEL	not listed
OSHA PEL-C	5ppm / 7mg/m ³	OSHA STEL	not listed

Ventilation	mechanical ventilation may be required if product mist forms in handling or processing
Hands	use butyl or neoprene <u>gauntlet-style</u> gloves – <i>other types also protect; confirm suitability with supplier</i>
Eyes	safety glasses with side shields & a face shield – <i>always protect the eyes</i>
Clothing	as appropriate for the task, wear butyl or neoprene protective clothing: apron, boots, hat & long sleeves

9. PHYSICAL AND CHEMICAL PROPERTIES

Odor & Appearance	clear, green, liquid with an astringent hydrogen chloride odor
Odor Threshold	1ppm – 5ppm – <i>hydrogen chloride</i>
Vapor Pressure	as for water
Evaporation Rate (<i>Butyl Acetate = 1</i>)	as for water
Vapor Density (air = 1)	0.6 (<i>water</i>), 1.3 (<i>hydrogen chloride</i>)
Boiling Point	102°C / 216°F – <i>initial boiling point</i>
Freezing Point	not known – <i>slightly below 0°C / 32°F</i>
Specific Gravity	1.084-1.096 (20/20°C)
Water Solubility	complete
Viscosity	not known – <i>thin mobile liquid</i>
pH	below 1
Molecular Weight (grams/mole)	18 (<i>water</i>), 36.5 (<i>hydrogen chloride</i>), 98 (<i>phosphoric acid</i>), surfactant – <i>not known</i>

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10. REACTIVITY

Dangerously Reactive With	alkalis, reducing agents
Also Reactive With	metals
Chemical Stability	stable; will not polymerize
Decomposes in Presence of	does not decompose up to the boiling point
Decomposition Products	none apart from Hazardous Combustion Products
Mechanical Impact	not sensitive

11. TOXICITY INFORMATION

i. ACUTE EXPOSURE

Skin Contact	corrosive to skin
Skin Absorption	probably not; toxic effects unlikely by this route
Eye Contact	corrosive to eyes; damage may be permanent
Inhalation	mist, fume or vapour is corrosive to the respiratory tract
Ingestion	corrosive to mouth, throat & stomach; death due to internal bleeding is possible
Calculated LD ₅₀ (oral)	11,650mg/kg (rat)
Calculated LD ₅₀ (skin)	8125mg/kg (rabbit)
Calc. LC ₅₀ (inhalation)	168mg/m ³ (rat)

ii. CHRONIC EXPOSURE

General	repeated skin contact with dilute solutions may cause dermatitis
Sensitizing	not a sensitizer
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

12. ECOLOGICAL INFORMATION

Phosphoric Acid:

Bioaccumulation	not a bioaccumulator
Biodegradation	inorganic substance cannot biodegrade; <i>limiting plant nutrient – taken up by plant material</i>
Abiotic Degradation	neutralized by carbonate rock & soils; resulting phosphate compounds precipitate and persist
Mobility in soil, water	water soluble, may move readily in environment OR may precipitate on contact with carbonates

Aquatic Toxicity:

LC ₅₀ (Fish, 96hr)	pH=3.0-3.25 (Lepomis macrochirus) ¹ , 138mg/litre (Gambusia affinis) ¹ , 75mg/litre (Oryzias latipes) ¹
EC ₅₀ (Crustacea, 12hr)	pH=4.6 (Daphnia magna), pH=4.1 (Daphnia pulex), pH=3.4 (Gammarus pulex & fossarum)
EC ₅₀ (Algae)	>100mg/litre (Desmodesmus subspicatus) ¹ , 78mg/litre (Pseudokirchneriella subcapitata) ¹
EC ₅₀ (Bacteria)	270mg/litre (“activated sludge”) ¹

Hydrochloric Acid:

Bioaccumulation	cannot bioaccumulate
Biodegradation	inorganic substance – cannot biodegrade
Abiotic Degradation	reacts with various substances (eg: limestone, cement, sand) to neutralise itself
Mobility in soil, water	water soluble; moves readily in soil & water, <i>but rapid neutralization may limit movement</i>

Aquatic Toxicity

LC ₅₀ (Fish, 96hr)	pH 3.25-3.5 (Lepomis macrochirus), 282mg/litre (Gambusia affinis @ pH=6.0-8.2), 4.9mg/litre (Cyprinus carpio), 10.3mg/litre (Oncorhynchus mykiss) & others
LC ₈₀ (Crustacea, 72hr)	56mg/litre (Daphnia magna) – LC ₈₀ ; 80% mortality
LC ₅₀ (Crustacea, 72hr)	260mg/litre (Crangon crangon)
EC ₅₀ (Algae)	0.0492mg/litre (Selenastrum capricornutum)

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12. ECOLOGICAL INFORMATION**Nonionic Surfactant:**

Bioaccumulation	cannot bioaccumulate
Biodegradation	biodegrades in the presence of oxygen; various results available: <i>no data available</i>
Abiotic Degradation	not known – <i>no data available</i>
Mobility in soil, water	water soluble; moves readily through soil & the water column

Aquatic Toxicity

LC ₅₀ (Fish 96 hr)	>100mg/litre (<i>species not known</i>)
LC ₅₀ (Crustacea, 48hr)	>100mg/litre (<i>species not known</i>)
EC ₅₀ (Algae, 96hr)	>100mg/litre (<i>species not known</i>)
LC ₅₀ (Microorganisms)	not known – <i>thought to be harmless</i>

13. DISPOSAL CONSIDERATIONS

Waste Disposal	do not flush to sewer; neutralize with appropriate alkaline waste; the resulting neutral salt may be acceptable in sanitary landfill
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.

13. DISPOSAL CONSIDERATIONS

Waste Disposal	do not flush 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

Shipping Name

Classification

Marine Pollution**ERAP Required**

UN – 1760

Corrosive liquids, N.O.S.
(phosphoric acid)**Class 8; Packing Group III***not a marine pollutant**No***cont'd next page****PLEASE ENSURE THAT THIS SDS IS GIVEN TO, AND EXPLAINED TO PEOPLE USING THIS PRODUCT.****EMERGENCY INFORMATION: INFOTRAC 1-800-535-5053**

15. REGULATIONS

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

U.S.A. Regulations – Phosphoric Acid:

Immediately Dangerous to Life or Health: 1000 mg/cu m

Acceptable Daily Intakes: FAO/WHO Expert Committee on Food Additives...recommended.../levels/ for total dietary phosphorus...unconditional acceptance level /of less than 30 mg/kg body wt/ is considered safe in any type of diet...conditional acceptance level /of 30-70 mg/kg body wt/ is acceptable only when dietary calcium level is high /phosphates/

Allowable Tolerances: Residues of phosphoric acid are exempted from the requirement of a tolerance when used in accordance with good agricultural practice as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops or to raw agricultural commodities after harvest. Use: buffer. Limit: none. Residues of the following chemical substances are exempted from the requirement of a tolerance when used in accordance with good manufacturing practice as ingredients in an antimicrobial pesticide formulation, provided that the substance is applied on a semi-permanent or permanent food-contact surface (other than being applied on food packaging) with adequate draining before contact with food. ... (b) The following chemical substances when used as ingredients in an antimicrobial pesticide formulation may be applied to: Dairy processing equipment, and food-processing equipment and utensils. Phosphoric acid is included on this list. Residues of the following chemical substances are exempted from the requirement of a tolerance when used in accordance with good manufacturing practice as ingredients in an antimicrobial pesticide formulation, provided that the substance is applied on a semi-permanent or permanent food-contact surface (other than being applied on food packaging) with adequate draining before contact with food. ... (c) The following chemical substances when used as ingredients in an antimicrobial pesticide formulation may be applied to: Food-processing equipment and utensils. Phosphoric acid is included on this list.

U.S.A. Regulations – Hydrochloric Acid:

Immediately Dangerous to Life or Health: 50 ppm

Allowable Tolerances: Residues of hydrochloric acid are exempted from the requirement of a tolerance when used as a solvent, neutralizer in accordance with good agricultural practice as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops or to raw agricultural commodities after harvest.

OSHA Standards: Permissible Exposure Limit: Table Z-1 Ceiling value: 5 ppm (7 mg/cu m).

NIOSH Recommendations: Recommended Exposure Limit: Ceiling value: 5 ppm (7 mg/cu m).

Threshold Limit Values: Ceiling Limit: 2 ppm. A4; Not classifiable as a human carcinogen.

Atmospheric Standards: Listed as a hazardous air pollutant generally known or suspected to cause serious health problems. The Clean Air Act, as amended in 1990, directs EPA to set standards requiring major sources to sharply reduce routine emissions of toxic pollutants. EPA is required to establish and phase in specific performance based standards for all air emission sources that emit one or more of the listed pollutants. Hydrochloric acid is included on this list.

Clean Water Act Requirements: Hydrochloric acid is designated as a hazardous substance under section 311(b)(2)(A) of the Federal Water Pollution Control Act and further regulated by the Clean Water Act Amendments of 1977 and 1978. These regulations apply to discharges of this substance. This designation includes any isomers and hydrates, as well as any solutions and mixtures containing this substance.

CERCLA Reportable Quantities: Releases of CERCLA hazardous substances are subject to the release reporting requirement of CERCLA section 103, codified at 40 CFR part 302, in addition to the requirements of 40 CFR part 355. Hydrochloric acid is an extremely hazardous substance (EHS) subject to reporting requirements when stored in amounts in excess of its threshold planning quantity (TPQ) of 500 lbs. /Gas form only/ Persons in charge of vessels or facilities are required to notify the National Response Center (NRC) immediately, when there is a release of this designated hazardous substance, in an amount equal to or greater than its reportable quantity of 5000 lb or 2270 kg. The toll free number of the NRC is (800) 424-8802. The rule for determining when notification is required is stated in 40 CFR 302.4 (section IV. D.3.b).

RCRA Requirements: A solid waste containing hydrochloric acid may become characterized as a hazardous waste when subjected to testing for corrosivity as stipulated in 40 CFR 261.21, and if so characterized, must be managed as a hazardous waste.

FIFRA Requirements: Residues of hydrochloric acid are exempted from the requirement of a tolerance when used as a solvent, neutralizer in accordance with good agricultural practices as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops or to raw agricultural commodities after harvest. As the federal pesticide law FIFRA directs, EPA is conducting a comprehensive review of older pesticides to consider their health and environmental effects and make decisions about their future use. Under this pesticide reregistration program, EPA examines health and safety data for pesticide active ingredients initially registered before November 1, 1984, and determines whether they are eligible for reregistration. In addition, all pesticides must meet the new safety standard of the Food Quality Protection Act of 1996. Pesticides for which EPA had not issued Registration Standards prior to the effective date of FIFRA, as amended in 1988, were divided into three lists based upon their potential for human exposure and other factors, with List B containing pesticides of greater concern and List D pesticides of less concern. Hydrogen chloride is found on List D. Case No: 4064; Pesticide type: fungicide, herbicide, antimicrobial; Case Status: RED Approved 02/94; OPP has made a decision that some/all uses of the pesticide are eligible for reregistration, as reflected in a Reregistration Eligibility Decision document. ; Active ingredient (AI): hydrogen chloride; AI Status: OPP has completed a Reregistration Eligibility Decision document for the case/AI.

FDA Requirements: Hydrochloric acid used as a buffer and neutralizing agent in animal drugs, feeds, and related products is generally recognized as safe when used in accordance with good manufacturing or feeding practice. This substance is generally recognized as safe when used as a buffer and neutralizing agent in accordance with good manufacturing practice. Drug products containing certain active ingredients offered over-the-counter (OTC) for certain uses. A number of active ingredients have been present in OTC drug products for various uses, as described below. However, based on evidence currently available, there are inadequate data to establish general recognition of the safety and effectiveness of these ingredients for the specified uses: hydrochloric acid is included in digestive aid drug products.

16. OTHER INFORMATION

Date of Preparation **February 2015**

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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