



# MATERIAL SAFETY DATA SHEET

## 1. Product and Company Identification

**Product Name** Tri Clean 2x (4372)  
**CAS #** Mixture  
**Product use** Cleaner  
**Manufacturer** Nu-Calgon  
2008 Altom Court  
St. Louis, MO 63146 US  
Phone: 314-469-7000 / 800-554-5499  
Emergency Phone: 1-800-424-9300 (CHEMTREC)

## 2. Hazards Identification

**Emergency overview** DANGER  
CAUSES EYE BURNS. CAUSES SKIN BURNS.

**Potential short term health effects**

**Routes of exposure** Eye, Skin contact, Inhalation, Ingestion.

**Eyes** Causes chemical burns. May cause blindness.

**Skin** Causes chemical burns. Harmful contact may not cause immediate pain.

**Inhalation** May cause respiratory tract irritation or chemical burns.

**Ingestion** Harmful if swallowed. May cause chemical burns to mouth, throat and stomach.

**Target organs** Eyes. Respiratory system. Skin.

**Chronic effects** Prolonged or repeated exposure to dilutions can cause drying, defatting and dermatitis.

**Signs and symptoms** The product causes burns of eyes, skin and mucous membranes.

**OSHA Regulatory Status** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**Potential environmental effects** Components of this product have been identified as having potential environmental concerns.

## 3. Composition / Information on Ingredients

Ingredient(s)	CAS #	Percent
Lauryldimethylamine oxide	1643-20-5	5 - 10
Alkyl polyglycoside	110615-47-9	3 - 7
Potassium hydroxide	1310-58-3	10 - 30
Silicic acid, sodium salt	1344-09-8	10 - 30
Potassium carbonate	584-08-7	1 - 5

## 4. First Aid Measures

**First aid procedures**

**Eye contact** Immediately flush with cool water. Remove contact lenses, if applicable, and continue flushing for 15 minutes. Obtain medical attention immediately.

**Skin contact** Immediately flush with cool water for 15 minutes while removing contaminated clothing and shoes. Discard or wash well before reuse. Obtain medical advice immediately.

**Inhalation** If symptoms develop move victim to fresh air. If symptoms persist, obtain medical attention.

**Ingestion** Do not induce vomiting. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Never give anything by mouth if victim is unconscious, or is convulsing. Obtain medical attention.

**General advice** If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Avoid contact with eyes and skin. Keep out of reach of children.

---

## 5. Fire Fighting Measures

---

<b>Flammable properties</b>	Not flammable by WHMIS/OSHA criteria.
<b>Extinguishing media</b>	
<b>Suitable extinguishing media</b>	Not available
<b>Unsuitable extinguishing media</b>	Not available
<b>Protection of firefighters</b>	
<b>Specific hazards arising from the chemical</b>	Not available
<b>Protective equipment for firefighters</b>	Firefighters should wear full protective clothing including self contained breathing apparatus.
<b>Hazardous combustion products</b>	May include and are not limited to: Oxides of carbon. Oxides of nitrogen. Oxides of sulphur.
<b>Explosion data</b>	
<b>Sensitivity to mechanical impact</b>	Not available
<b>Sensitivity to static discharge</b>	Not available

---

## 6. Accidental Release Measures

---

<b>Personal precautions</b>	Keep unnecessary personnel away. Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep people away from and upwind of spill/leak.
<b>Environmental precautions</b>	Do not discharge into lakes, streams, ponds or public waters.
<b>Methods for containment</b>	Stop leak if you can do so without risk. Prevent entry into waterways, sewers, basements or confined areas.
<b>Methods for cleaning up</b>	Before attempting clean up, refer to hazard data given above. Small spills may be absorbed with non-reactive absorbent and placed in suitable, covered, labelled containers. Prevent large spills from entering sewers or waterways. Contact emergency services and supplier for advice. Never return spills to original containers for re-use.

---

## 7. Handling and Storage

---

<b>Handling</b>	DANGER -- CORROSIVE Do not get in eyes, on skin or on clothing. Avoid breathing vapors or mists of this product. Use good industrial hygiene practices in handling this material. Keep container tightly closed. Use only with adequate ventilation. Wash thoroughly after handling.
<b>Storage</b>	Keep out of the reach of children. Store in a closed container away from incompatible materials.

---

## 8. Exposure Controls / Personal Protection

---

### Exposure limits

Ingredient(s)	Exposure Limits
Alkyl polyglycoside	<b>ACGIH-TLV</b> Not established <b>OSHA-PEL</b> Not established
Lauryldimethylamine oxide	<b>ACGIH-TLV</b> Not established <b>OSHA-PEL</b> Not established
Potassium carbonate	<b>ACGIH-TLV</b> Not established <b>OSHA-PEL</b> Not established
Potassium hydroxide	<b>ACGIH-TLV</b> Ceiling: 2 mg/m <sup>3</sup> <b>OSHA-PEL</b> Not established
Silicic acid, sodium salt	<b>ACGIH-TLV</b> Not established <b>OSHA-PEL</b> Not established

### Engineering controls

General ventilation normally adequate.

### Personal protective equipment

#### Eye / face protection

Wear chemical goggles.

#### Hand protection

Rubber gloves. Confirm with a reputable supplier first.

#### Skin and body protection

As required by employer code.

#### Respiratory protection

Where exposure guideline levels may be exceeded, use an approved NIOSH respirator.

#### General hygiene considerations

Use good industrial hygiene practices in handling this material.  
When using do not eat or drink.  
Wash hands before breaks and immediately after handling the product.

---

## 9. Physical and Chemical Properties

---

Appearance	Clear
Color	Orange
Form	aqueous solution
Odor	Fresh.
Odor threshold	Not available
Physical state	Liquid
pH	13.5 (Concentrate)
Melting point	Not available
Freezing point	Not available
Boiling point	Not available
Pour point	Not available
Evaporation rate	Not available
Flash point	Not available
Auto-ignition temperature	Not available
Flammability limits in air, lower, % by volume	Not available

<b>Flammability limits in air, upper, % by volume</b>	Not available
<b>Vapor pressure</b>	Not available
<b>Vapor density</b>	Not available
<b>Specific gravity</b>	Not available
<b>Octanol/water coefficient</b>	Not available
<b>Bulk density</b>	9.87
<b>Percent volatile</b>	Not available

## 10. Stability and Reactivity

<b>Reactivity</b>	This product may react with strong oxidizing agents.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.
<b>Chemical stability</b>	Stable under recommended storage conditions.
<b>Conditions to avoid</b>	Do not mix with other chemicals.
<b>Incompatible materials</b>	Acids. Oxidizers.
<b>Hazardous decomposition products</b>	May include and are not limited to: Oxides of carbon. Oxides of nitrogen. Oxides of sulphur.

## 11. Toxicological Information

### Component analysis - LC50

<b>Ingredient(s)</b>	<b>LC50</b>
Alkyl polyglycoside	Not available
Lauryldimethylamine oxide	Not available
Potassium carbonate	Not available
Potassium hydroxide	Not available
Silicic acid, sodium salt	Not available

### Component analysis - Oral LD50

<b>Ingredient(s)</b>	<b>LD50</b>
Alkyl polyglycoside	5000 mg/kg rat
Lauryldimethylamine oxide	2700 mg/kg mouse
Potassium carbonate	1870 mg/kg rat; 2570 mg/m3 mouse
Potassium hydroxide	214 mg/kg rat
Silicic acid, sodium salt	1153 mg/kg rat

### Effects of acute exposure

<b>Eye</b>	Causes chemical burns. May cause blindness.
<b>Skin</b>	Causes chemical burns. Harmful contact may not cause immediate pain.
<b>Inhalation</b>	May cause respiratory tract irritation or chemical burns.
<b>Ingestion</b>	Harmful if swallowed. May cause chemical burns to mouth, throat and stomach.
<b>Sensitization</b>	Non-hazardous by WHMIS/OSHA criteria.
<b>Chronic effects</b>	Non-hazardous by WHMIS/OSHA criteria.
<b>Carcinogenicity</b>	Non-hazardous by WHMIS/OSHA criteria.
<b>Mutagenicity</b>	Non-hazardous by WHMIS/OSHA criteria.
<b>Reproductive effects</b>	Non-hazardous by WHMIS/OSHA criteria.
<b>Teratogenicity</b>	Non-hazardous by WHMIS/OSHA criteria.
<b>Name of Toxicologically Synergistic Products</b>	Not available

## 12. Ecological Information

<b>Ecotoxicity</b>	See below	
<b>Ecotoxicity - Freshwater Fish - Acute Toxicity Data</b>		
Potassium hydroxide	1310-58-3	96 Hr LC50 Gambusia affinis: 80 mg/L [static]
Silicic acid, sodium salt	1344-09-8	96 Hr LC50 Lepomis macrochirus: 301-478 mg/L; 96 Hr LC50 Brachydanio rerio: 3185 mg/L [semi-static]
<b>Ecotoxicity - Water Flea - Acute Toxicity Data</b>		
Silicic acid, sodium salt	1344-09-8	96 Hr EC50 Daphnia magna: 216 mg/L
<b>Persistence / degradability</b>	Not available	
<b>Bioaccumulation / accumulation</b>	Not available	
<b>Mobility in environmental media</b>	Not available	
<b>Environmental effects</b>	Not available	
<b>Aquatic toxicity</b>	Not available	
<b>Partition coefficient</b>	Not available	
<b>Chemical fate information</b>	Not available	
<b>Other adverse effects</b>	Not available	

## 13. Disposal Considerations

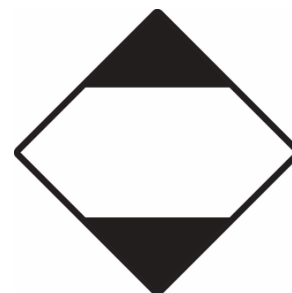
<b>Disposal instructions</b>	Dispose in accordance with all applicable regulations.
<b>Waste from residues / unused products</b>	Not available
<b>Contaminated packaging</b>	Not available

## 14. Transport Information

### U.S. Department of Transportation (DOT)

#### Basic shipping requirements:

<b>Proper shipping name</b>	Corrosive liquid, basic, inorganic, n.o.s. (POTASSIUM HYDROXIDE RQ = 5556 lbs)
<b>Hazard class</b>	8
<b>UN number</b>	UN3266
<b>Packing group</b>	II
<b>Additional information:</b>	
<b>Special provisions</b>	B2, IB2, T11, TP2, TP27
<b>Packaging exceptions</b>	<0.3 Gallons - Limited Quantity
<b>ERG number</b>	154



### Transportation of Dangerous Goods (TDG - Canada)

#### Basic shipping requirements:

<b>Proper shipping name</b>	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (POTASSIUM HYDROXIDE)
<b>Hazard class</b>	8
<b>UN number</b>	UN3266
<b>Packing group</b>	II
<b>Additional information:</b>	
<b>Special provisions</b>	16
<b>Packaging exceptions</b>	<1L - Limited Quantity



## 15. Regulatory Information

**Canadian federal regulations** This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

### Canada - WHMIS - Ingredient Disclosure List

Lauryldimethylamine oxide	1643-20-5	1 %
Potassium carbonate	584-08-7	1 %
Potassium hydroxide	1310-58-3	1 %

**WHMIS status** Controlled

**WHMIS classification** Class E - Corrosive Material

**WHMIS labeling**



**Occupational Safety and Health Administration (OSHA)**

**29 CFR 1910.1200 hazardous chemical** Yes

**US Federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

### U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

Potassium hydroxide	1310-58-3	1000 Lb final RQ; 454 kg final RQ
---------------------	-----------	-----------------------------------

### U.S. - CWA (Clean Water Act) - Hazardous Substances

Potassium hydroxide	1310-58-3	Present
---------------------	-----------	---------

**CERCLA (Superfund) reportable quantity**

Potassium hydroxide: 1000.0000

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories** Immediate Hazard - Yes  
Delayed Hazard - No  
Fire Hazard - No  
Pressure Hazard - No  
Reactivity Hazard - No

**Section 302 extremely hazardous substance** No

**Section 311 hazardous chemical** Yes

**Clean Air Act (CAA)** Not available

**Clean Water Act (CWA)** Hazardous substance

**State regulations** This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

### U.S. - California - 8 CCR Section 339 - Director's List of Hazardous Substances

Potassium hydroxide	1310-58-3	Present
---------------------	-----------	---------

### U.S. - Louisiana - Reportable Quantity List for Pollutants

Potassium hydroxide	1310-58-3	1000 Lb final RQ; 454 kg final RQ
---------------------	-----------	-----------------------------------

### U.S. - Massachusetts - Right To Know List

Potassium hydroxide	1310-58-3	Present
---------------------	-----------	---------

### U.S. - Minnesota - Hazardous Substance List

Potassium hydroxide	1310-58-3	Present
---------------------	-----------	---------

### U.S. - New Jersey - Right to Know Hazardous Substance List

Potassium hydroxide	1310-58-3	sn 1571
---------------------	-----------	---------

### U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances

Potassium hydroxide	1310-58-3	1000 Lb RQ (air); 100 lb RQ (land/water)
---------------------	-----------	--

### U.S. - Pennsylvania - RTK (Right to Know) List

Potassium hydroxide	1310-58-3	Environmental hazard
---------------------	-----------	----------------------

### U.S. - Rhode Island - Hazardous Substance List

Potassium hydroxide	1310-58-3	Toxic (caustic); Flammable (caustic)
---------------------	-----------	--------------------------------------

**Inventory name****Country(s) or region**

Canada

Canada

United States &amp; Puerto Rico

**Inventory name**

Domestic Substances List (DSL)

Non-Domestic Substances List (NDSL)

Toxic Substances Control Act (TSCA) Inventory

**On inventory (yes/no)\***

Yes

No

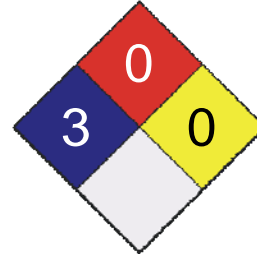
Yes

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

**16. Other Information**

LEGEND HMIS/NFPA	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

Health	/ 3
Flammability	0
Physical Hazard	0
Personal Protection	X

**Disclaimer**

Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.

**Issue date**

30-Mar-2012

**Effective date**

31-Mar-2012

**Expiry date**

31-Mar-2015

**Prepared by**

Dell Tech Laboratories Ltd. (519) 858-5021

**Other information**

For an updated MSDS, please contact the supplier/manufacturer listed on the first page of the document.

This MSDS conforms to the ANSI Z400.1/Z129.1-2010 Standard.