

**TORNADO****1 - Product and Company Identification**Product Name: **TORNADO**

Product Use: Heavy duty USDA Authorized Detergent

**SUPPLIER:****MANUFACTURER:**Vector Laboratories  
Howard Grant Corp.  
316 Alexander St.  
Youngstown, OH 44502  
Tel: 800-331-0347**EMERGENCY: 800-255-3924 CHEM-TEL ID # MIS0004293****2 - Hazards Identification****2.1 Classification**

H290: May be corrosive to metals

H314: Causes severe skin burns and eye damage

**2.2 Label Elements****GHS05 Corrosion****GHS Irritant****Signal Word (GHS – US)****Danger****Hazard Statements (GHS – US)**

H290 – May be corrosive to metals

H314 – Causes severe skin burns and eye damage

H318 - Causes serious eye damage

**Precautionary Statements (GHS – US)**

P233 – Keep container tightly closed

P260 – Do not breathe vapors, spray, mist

P262 – Do not get in eyes, on skin or on clothing

P264- Wash...thoroughly after handling

P270 - Do not eat, drink or smoke while using this product

P280- Wear eye protection, protective gloves, protective clothing

P301+P330+P331 – If swallowed: rinse mouth. DO NOT induce vomiting

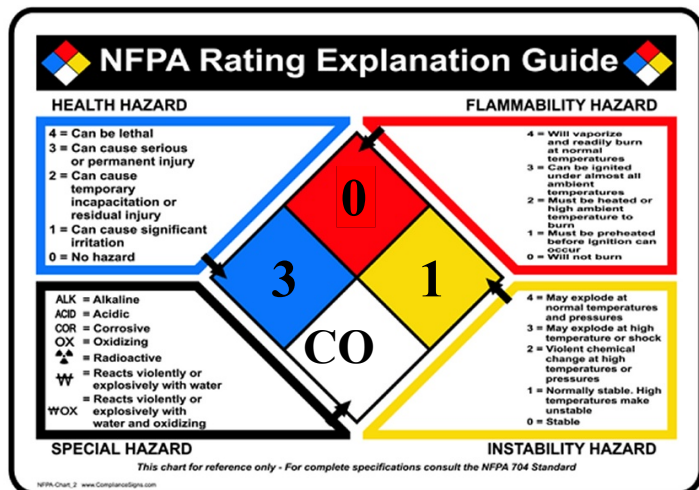
P303+P361+P353 – IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304+P340 – IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

P305+P351+P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

P310 – Immediately call a POISON CENTER or doctor/physician

- P321 – Specific treatment (see Section 4)
- P363 – Wash contaminated clothing before reuse.
- P390 – Absorb spillage to prevent material damage
- P404 – Store in a closed container
- P406 – Store in a corrosive resistant container with a resistant inner liner
- P501 – Dispose of contents/container according to local, regional, national and international regulations.



PERSONAL PROTECTION INDEX											
<b>A</b>			<b>G</b>								
<b>B</b>			<b>H</b>								
<b>C</b>				<b>I</b>							
<b>D</b>				<b>J</b>							
<b>E</b>				<b>K</b>							
<b>F</b>					<b>X</b> Consult your supervisor or S.O.P. for "SPECIAL" handling directions						
<b>A</b>		<b>n</b>		<b>p</b>		<b>q</b>		<b>r</b>		<b>s</b>	
	Safety Glasses		Splash Goggles		Gloves		Boots		Synthetic Apron		Full Suit
<b>t</b>		<b>u</b>		<b>w</b>		<b>y</b>		<b>z</b>		<b>Additional Information</b>	
	Dust Respirator		Vapor Respirator		Dust & Vapor Respirator		Full Face Respirator		Airline Hood or Mask		

### 2.3 Other Hazards

Other Hazards not contributing to the classification: Corrosive to the respiratory tract  
 H402: Harmful to aquatic life (at full strength with high pH)  
 P273 – Avoid release to the environment

### 2.4 Unknown acute toxicity (GHS – US)

No data available

## 3 – Composition/information on ingredients

3.1 Chemical Identity: SOLUTION

3.2 Common name, synonyms, etc: Mixture; Corrosive solution; Corrosive detergent.

Chemical Name	Cas Number	% Present	GHS Classification	Notes
Complex Alkyl Phosphate Ester	68130-47-2	< 10 %	Acute Tox 5 (Inhalation); H332 Acute Tox 5(Dermal); H312 Acute Tox 5 (Oral); H302 Eye Irrit 2A; H319 Skin Irrit 2; H315	[1]
Sodium Hydroxide	1310-73-2	< 10 %	Met. Corr 1; H290 Skin Corr 1A; H314 Eye Dam 1; H318 Acute Tox 4; H312	[1]
Trade Secret Formulation		< 60 %		
Water	7732-18-5	> 50 %		

[1] Substance classified with a health or environmental hazard.

Full text of H-phrases: see section 16

## 4 – First Aid Measures

### 4.1 Description of First Aid Measures

**First-aid measures general:** Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label if possible).



**After inhalation:** If inhaled, removed to fresh air and keep at rest in a position comfortable for breathing, if you feel unwell, seek medical advice. If breathing has stopped, give artificial respiration then oxygen if needed. Immediately contact emergency services.

**After skin contact:** Remove contaminated clothing. Immediately flush skin with plenty of water for at least 15 minutes. Wash skin thoroughly with soap and water or use a recognized skin cleanser. If irritation persists, seek medical advice.



**After eye contact:** Immediately flush with large quantities of water for at least 15 minutes while holding eyelids open. If contact lenses are present remove if easy to do so. Continue to flush eyes out. Seek medical attention immediately.

**After ingestion:** Immediately rinse mouth. Drink large quantities of water or milk for dilution effect; give diluted vinegar or lemon juice to conscious person; **DO NOT induce vomiting**; seek medical attention immediately.



### 4.2 Most important symptoms and effects, both acute and delayed

**Symptoms/Injuries:** Corrosive to eyes, respiratory system and skin.

**Symptoms/Injuries after Inhalation:** Coughing, burning in throat, shortness of breath. Corrosive to respiratory tract.

**Symptoms/Injuries after skin contact:** Severe irritation, redness and burning/stinging. Corrosive. Causes burns.

**Symptoms/Injuries after eye contact:** Irritation, reddening, tearing, severe burning. Causes serious eye damage.

**Symptoms/Injuries after ingestion:** Burning, drooling, gagging. Ingestion is likely to be harmful or have adverse effects.

### 4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed

If medical attention is needed have container or label at hand.

## 5 – Firefighting Measures

**5.1 Extinguishing Media:** Use media appropriate for surrounding area. Water, Dry Chemical or Foam recommended.

**5.2 Special hazards arising from the substance or mixture:**

**Fire Hazard:** Not flammable

**Explosion Hazard:** Product is not explosive.

**Other Hazards:** Chemical Fires may release corrosive gases/vapours



**5.3 Special protective equipment and precautions for firefighters**

Do not enter area without proper protective equipment including respiratory protection.

Exercise caution when fighting any chemical fire.

Do Not allow run-off from fire fighting to enter drains or water courses.

## 6 – Accidental Release Measures

**6.1 Personal Precautions, Protective Equipment And Emergency Procedures:**

**General Measures:** Do not allow contact with metals. Do not get in eyes, on skin or clothing. Do not breathe (vapor, mist, gas). Wear protective equipment. Keep unprotected people away.

**6.1.1 For Non-emergency Personnel**

**Protective Equipment:** Use appropriate personal protection equipment (PPE)

**Emergency Procedures:** Evacuate unnecessary personnel.

**6.1.2 For Emergency Responders**

**Protective Equipment:** Equip cleanup crew with proper protection.

**Emergency Procedures:** Ventilate area. Stop leak if safe to do so.

**6.2 Environmental Precautions:**

Do not allow to enter sewers/surface, ground water or public waters.

**6.3 Methods and Material for Containment and Cleaning Up**

**For containment:** Cautiously neutralize spilled liquid. Absorb and contain with inert material then place in suitable container.

**Methods for Cleaning Up:** Clear up spills immediately and dispose of waste safely according to Federal, State and local regulations.



## 7- Handling and storage

**7.1 Precautions for safe handling:** Ensure good ventilation at workplace. Use proper safety equipment and clothing.  
Handle in accordance with good industrial hygiene and safety procedures.  
Do not eat, drink or smoke while handling.  
Do not use near heat, sparks or open flame.  
Wash thoroughly after use; remove any contaminated clothing to be washed.

**7.2 Conditions For Safe Storage, Including Any Incompatibles:** store in a cool, dry, well ventilated place. Keep container tightly closed when not in use. Storage areas should be periodically checked for corrosion and integrity.

**Incompatible Products:** Strong acids, strong oxidizers, metals.

**Special Rules On Packaging:** Store in original container or corrosive resistant and/or lined container.

**7.3 Specific End Use(s)**

For heavy duty cleaning of kitchens or food preparation areas where a USDA Authorized product is required or beneficial. For Industrial and Professional use only.

## 8 – Exposure Controls/Personal Protection

### 8.1 Control Parameters

CAS No.	Ingredient	Source	Value
111-76-2	Complex Alkyl Phosphate Ester	OSHA	TWA 100ppm (240 mg/m <sup>3</sup> )[skin]
		ACGIH	TWA 20ppm Revised 2003
		NIOSH	TWA 5 ppm (24 mg/m <sup>3</sup> ) [skin]
		IDLH	700 ppm
1310-73-2	Sodium Hydroxide	OSHA	TWA 2 mg/m <sup>3</sup>
		ACGIH	Ceiling: 2 mg/m <sup>3</sup>
		NIOSH	C 2 mg/m <sup>3</sup>
		IDLH	10 mg/m <sup>3</sup>

**8.2 Appropriate Engineering Controls:** Ensure all/national/local regulations are observed. Ensure adequate ventilation, especially in confined areas. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

### 8.3 Individual protection measures

(PPE – Personal Protection Equipment)

**Protective clothing.** Safety glasses. Face Shield. Gloves.

Insufficient ventilation: wear respiratory protection.

**Eye Protection:** Chemical goggles or face shield.

**Hand Protection:** Wear chemically resistant protective gloves.

**Clothing:** Wear suitable protective clothing such as chemical resistant clothing, coveralls/apron, chemical resistant boots.

**Respiratory Protection:** When needed, use a NIOSH approved respirator or self-contained breathing apparatus.



## 9 – Physical and Chemical Properties

Physical State:..... Liquid  
 Appearance: ..... Red  
 Odor:..... None  
 Odor Threshold: ..... N.A.  
**pH (Concentrate):**..... 14.0  
 Melt/freeze point: ..... No data available  
 Boiling Point: ..... 20°F  
 Flash Point: ..... 340°F  
 Auto Ignition Temp. .... No data available  
 Decomposition Temp..... No data available  
 Flammability (solid, gas)..... No data available

**Upper/lower flammability or explosive limits**  
 Lower limits ..... No data available  
 Upper limits ..... No data available  
 Vapor Pressure ..... No data available  
 Vapor Density: ..... No data available  
 Relative Density:..... 1.09 (water = 1)  
 Solubility: ..... Complete  
 Evaporation Rate: ..... N.A.  
 Solubility In Water: ..... 100%  
**Partition coefficient: n-octanol/water**  
 ..... No data available  
 Auto-ignition temp. .... No data available  
 Decomposition temp..... No data available

## 10 – Stability and reactivity

**Chemical stability:** .....Stable under normal circumstances.

**Possibility of hazardous reactions**.....No dangerous reactions known.

**Conditions to avoid:** .....Heat sources, flames, extremely low or high temperatures, contact with metals.

**Incompatible materials:** .....Strong Acids, strong oxidizers, metals.

**Hazardous decomposition products:** .....No dangerous decomposition products known.

## 11 – Toxicological Information

### 11.1 Information on the likely routes of exposure:

Eye contact  
Skin contact  
Inhalation  
Ingestion

### 11.2 Symptoms related to the physical, chemical and toxicological characteristics:

Eyes: Stinging, redness, tearing, severe irritation and/or burning.  
Skin: Severe irritation, redness and burning/stinging.  
Inhalation: Coughing, burning in throat, shortness of breath.  
Ingestion: Burning, drooling, gagging.

### 11.3 Delayed and immediate effects and also chronic effects from short and long term exposure

Eyes: Causes serious eye damage  
Skin: Causes severe skin burns. Corrosive.  
Inhalation: Corrosive to the respiratory tract.  
Ingestion: Ingestion is likely to be harmful or have adverse effects.  
Carcinogens: No ingredients are listed by OSHA, IARC, or NTP as known or suspected carcinogens.  
CHRONIC TOXICITY: No data available  
MUTAGENIC DATA: Not genotoxic.  
Carcinogenic categories:  
IARC (International Agency for Research on Cancer)  
None of the ingredients is listed.  
NTP (National Toxicology Program)  
None of the ingredients is listed.

### 11.4 Numerical measures of toxicity

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LD50, mg/L/4hr	Inhalation Dust/Mist LD50, mg/L/4hr	Inhalation Gas LD50, ppm
Complex Alkyl Phosphate Ester (68130-47-2)	3950.00, Rat Category: 5	No data available	No data available	No data available	No data available
Sodium Hydroxide (1310-73-2)	6,600.00, Mouse - Category: NA	1350.00, Rabbit - Category: 4	600.00, Mouse – Category: NA	No data available	No data available

## 12– Ecological Information

### 12.1 Ecotoxicity (aquatic and terrestrial, where available)

Sodium Hydroxide  
LC50 Fish 1            40 mg/l

### 12.2 Persistence and degradability

No further relevant information available.

### 12.3 Bioaccumulative potential

No further relevant information available.

### 12.4 Mobility in Soil

No further relevant information available.

### 12.5 Other adverse effects.

No further specific information available.

#### General Notes:

- Water hazard class 1: slightly hazardous for water
- Do not allow undiluted product or large quantities of the product to reach ground water, water course or sewage system.
- Must not reach bodies of water or drainage ditch undiluted or unneutralized.
- Rinse off of bigger amounts into drain or the aquatic environment may lead to increased pH-values. A high pH-value harms aquatic organisms. diluted it will have minimal aquatic effect.
- **Results of PBT and vPvB assessment:** Not classified as PBT or vPvB.

*Conclusion: Ultimately Biodegradable*

## 13– Disposal Considerations

**Waste treatment methods:** Follow local, state and national regulations. Neutralization of pH prior to disposal is required.

**Recommendation:** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Disposal must be made in accordance with all relevant regulations.

## 14– Transport Information

**14.1 UN number:** UN 1824

**14.2 UN proper shipping name:**  
SODIUM HYDROXIDE SOLUTION

**14.3 Transport hazard class(es):** 8 – Corrosive

**14.4 Packing Group:** PG II –Danger

#### Special Provisions

Transport in bulk according to Annex II of Marpol 73/78 and the IBC code (49 CFR 172.102)

**14.5 Marine Pollutant:** No

**14.6 Special Precautions:** Warning: Corrosive substances. Transport in accordance with local, state and federal regulations.



## 15– Regulatory Information

**Regulatory Overview:** The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.

#### OSHA Hazard Communication Standard:

[ X ] Hazardous                      [ ] Non Hazardous

#### Cercla/Superfund:

This product does not contain any chemicals subjected to the reporting requirements of SARA Section 313

#### SARA Extremely Hazardous Substances:

This product does not contain any chemicals subjected to the reporting requirements of SARA Section 313



**SARA Hazard Categories:**

Acute (Immediate       Chronic       Fire       Pressure       Reactive       None

**SARA Toxic Substances:**

This product does not contain any chemicals subjected to the reporting requirements of SARA Section 313

**US Toxic Substances Control Act/Inventory Status**

All ingredients of this product are listed on the TSCA Inventory.

**EPCRA (Emergency Planning and Community Right-to Know Act) Chemicals and Reportable Quantities (RQs (Lbs))**

Sodium Hydroxide      1,000 Lbs RQ

**GHS:**

This product is classified and labeled according to the Globally Harmonized System (GHS).

**State Regulations:**

None Listed

**16– Other Information**

Disclaimer: To the best of our knowledge, the information contained herein is accurate. However, neither Vector Laboratories nor any of its affiliates assume any liability whatsoever for the accuracy or completeness of the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Final determination of suitability of any material and whether there is any infringement of patents is sole responsibility of the user. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described in this publication, we cannot guarantee that these are the only hazards which exist. Users of any chemical should satisfy themselves by independent investigation of current scientific and medical knowledge that the material can be used safely.