



6000 Susquehanna Plaza Dr.  
York, PA 17406  
1-800 297- 8266  
(717) 848-2570 FAX  
[guardian@guardiancsc.com](mailto:guardian@guardiancsc.com)

**Material Safety Data Sheet  
GCS-5452**

1	<b>Health</b>
2	<b>Flammability</b>
0	<b>Reactivity</b>
D	<b>Protective Equipment</b>

**Identity: GCS-5452**

**Section I - Manufacturer's Information**

GUARDIAN CSC  
6000 Susquehanna Plaza Dr.  
YORK, PA 17406  
(717) 848-2540  
[www.guardiancsc.com](http://www.guardiancsc.com)

Emergency Phone: CHEMTREC  
Information: 1-800-424-9300  
Updated: 06/02/14  
DOT ID: UN 1993  
Chemical Family: Water Treatment  
Hazard Class: Flammable

**Section II - Hazardous Ingredients/Identity Information**

<u>Hazardous Components</u>	<u>CAS</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>%</u>
Diethylhydroxylamine	3710-84-7	N.E.	N.E.	Minor

**Section III - Physical/Chemical Characteristics**

Boiling Point:	125°-135°F	Specific Gravity (H <sub>2</sub> O=1):	0.96
Vapor Pressure:	32 @ 25°C	Melting Point:	NA
Vapor Density:	3:1	Evaporation Rate (H <sub>2</sub> O=1):	
Solubility In Water:	Complete	pH:	<12.0
Appearance And Odor:	Clear to straw colored liquid, amine odor		

**Section IV - Fire and Explosion Hazard Data**

Flash Point:	115°F @ 98% active	Flammable Limits LEL:	NA	UEL:	NA
Method Used:	Open Cup				

**Extinguishing Media:**

CO2, Water, Foam, Dry chemical

**Special Fire Fighting Procedures:**

Protect fire fighters from physical contact with product. Product is flammable; firefighters are to wear protective clothing and self-contained breathing apparatus.

**Unusual Fire and Explosion Hazards:**

See Above (None Anticipated)

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**Section V - Reactivity Data**  
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Stability:	Stable
Conditions to Avoid:	Heat, Flames, Sparks (Some amines may react with Nitrates to form Nitrosamine which have been shown to cause cancer in Laboratory animals.)
Incompatibility (Materials to Avoid):	Oxidizers, Open Flames
Hazardous Decomposition or Byproducts:	Nitrogen Oxides, Carbon Monoxide, Carbon Dioxide
Hazardous Polymerization:	May not occur
Personnel Conditions to Avoid:	Skin, eye and esophageal irritant

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**Section VI - Health Hazard Data**  
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**Route(s) of Entry:**

Inhalation: Irritant      Skin: Irritant      Ingestion: Irritant

**Health Hazards (Acute and Chronic):**

Acute and chronic health hazards are difficult to accurately assess for mixtures. In general see the first aid section for acute effects and long term effects would have to be derived from these immediate results. Specific chronic effects can be studied from the individual hazardous chemicals as indicated under Section II as the best guess without extensive laboratory studies.

**Carcinogenicity:**

NTP: None Known      IARC Monographs: None Known      OSHA: None

**Signs and Symptoms of Exposure:**

Immediate contact may cause burning of the skin, eyes, and mucous membranes. Exposure to material can be corrosive to all body tissue.

**Medical Conditions General Aggravated By Exposure:**

A knowledge of available toxicology information and of the physical properties of the material suggests that exposure is unlikely to aggravate existing medical conditions. However, due to the widely varying uses and personal exposures possible, an individual will have to evaluate his/her particular situation. This is an alkali irritant, and has been seen to effect the nervous system, liver, and kidney as a toxin when over exposed to material to a limited and varying degree.

**Emergency and First Aid Procedures:**

**EYES:** Flush eyes with copious amounts of water for at least 15 minutes. Seek medical attention immediately.

**SKIN:** Wash thoroughly with soap and water, apply lotion if irritation continues.

**INHALATION:** Remove to fresh air; give oxygen if needed, or artificial respiration to maintain breathing. Get a Doctor if indicated.

**INGESTION:** Careful gastric lavage is required. Wash mouth and other contacted parts with water. Never give any substance to an unconscious person. If conscious **DO NOT** induce vomiting. Give one or two glasses of water. CALL A DOCTOR.

**DO NOT INDUCE VOMITING IF:**

Victim is in convulsions. Victim has symptoms of severe pain, burning sensation in the mouth or throat, or is already vomiting. If victim has ingested alkali, acid or petroleum distillate.

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**Section VII - Precautions for Safe Handling and Use**

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**Steps To Be Taken In Case Material Is Released Or Spilled:**

Large spills can be sucked up with a vacuum truck for further treatment. Small spills should be neutralized with dilute inorganic acids like nitric, sulfuric, phosphoric, or hydrochloric acids. Phosphoric acid is preferred. Shovel all spilled and neutralized material in place into suitable container for disposal in accordance with Federal, State, and Local laws.

**Waste Disposal Method:**

Since Federal, State, and Local laws vary greatly from situation to situation, and since these materials are mixtures, no one preferred waste disposal method can be given. One however must keep in mind that all of these type products are ultimately destined to go "down the drain" since they are cleaning compounds of one sort or another.

Generally in highly diluted or completely neutralized state they present no particular environmental hazard, they can be treated as ordinary waste, which is piped to a sanitary sewer for proper waste treatment.

The effluent from this product should not be discharged into any river, lake, stream, creek, or water shed that might contaminate drinking water unless the discharge has been specifically permitted by the proper authority as the DER, DEP, etc.

**Precautions to Be Taken in Handling and Storage:**

Do not freeze product. Do not subject product to excessive heat. KEEP OUT OF REACH OF CHILDREN. Do not contaminate with food stuffs. Do not mix with other chemicals except under direct supervision of a chemist or technically trained individual. Mix only with water. During storage and transportation of the product, keep product dry at all times, and do not exceed container integrity (improperly double or triple decking of palletized goods). If sensitivity or aggravations of allergy, or unanticipated personal health problems become evident, stop use and see your supervisor. Keep in mind that often the use solution and the concentrate will have different safety precautions.

**Other Precautions:**

Wear safety glasses or goggles. Use PVC or rubber coated gloves. If required to meet TLV requirements, wear self contained breathing apparatus. Use chemical apron. Have present eye wash and safety shower. Store in a cool dry area. Avoid temperature extremes.

Launder all clothing before reuse. Discard all contaminated gloves, boots, and other clothing that can not be properly cleaned.

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**Section VIII - Control Measures**  
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**Respiratory Protection (Specific Type):**

Usually not needed.

**Ventilation:**

Local Exhaust:	NA	Recommended:	NA	Special:	NA
Mechanical (General):	Usually sufficient	Other:	NA		

**Protective Gloves:**

PVC coated, rubber or similar type is recommended for repeated contact with use solution, or direct contact with concentrate.

**Eye Protection:**

Safety goggles and face shields are always recommended, as are safety showers and eye wash fountains in all processing areas.

**Other Protective Clothing or Equipment:**

Wear chemical protective and long sleeve shirts and pants. Launder dirty uniforms regularly. Wash daily to maintain good cleanliness when in contact with various cleaning or water treating chemicals.

**Work/Hygienic Practices:**

Non-slip work shoes with an apron are good practices to follow.

--- START CLEAN --- STAY CLEAN --- END CLEAN = WORK SAFELY

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**Section IX - Documentary Information**  
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**Comments:**

Section II Hazardous Material Section Percentage Key. If no hazardous chemicals are present then this section is not applicable.

Nil	-> 0.0% to 0.1%
Trace	-> 0.1% to 1.0%
Some	-> 1.0% to 5.0%
Minor Comp.	-> 5.0% to 25.0%
Substantial	->25.0% to 50.0%
Major Comp.	->50.0% to 100.0%

Substances listed in Section II are those identified as being at a concentration of 1% or greater or 0.1% if the substance is on the list of potential carcinogens cited in OSHA Hazard Communication Std.

If Section II does not contain any hazardous chemicals as presently defined in our applicable tables the message...

\*\*\*\*\* NO HAZARDOUS CHEMICALS \*\*\*\*\*

.... will appear in this section above.

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**Section X - Toxicological Information**  
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**Acute Oral Toxicity:** Diethylhydroxylamine: LD50 / rat / 2190 mg/kg

**Acute Dermal Toxicity:** Diethylhydroxylamine: LD50 / rabbit / 1300 mg/kg

**Acute Inhalation Toxicity:** Diethylhydroxylamine: LC50 / rat / 11.7 mg/l / 4 hour(s)

**Eye Irritation:** Diethylhydroxylamine: May cause eye irritation.

**Skin Irritation:** Diethylhydroxylamine: May cause skin irritation.

**Respiratory Tract Irritation:** This material maybe irritating to the respiratory tract.

**ADDITIONAL TOXICOLOGY INFORMATION:**

This product contains DIETHYLHYDROXYLAMINE:

The following ecotoxicity data is available for GCS-5452:

Ceriodaphnia dubia LC<sub>50</sub> (48 hours) – 1380 mg/L

**Genetic Toxicity:**

Unscheduled DNA synthesis in vitro - positive

Drosophila melanogaster recessive lethal assay - positive

Rat dominant lethal assay - ambiguous

Reproductive and Developmental Toxicity: 1 day pre mating / oral / rat / Doses: 0, 18, or 180mg/kg / pre and post implantation losses observed.

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