

**MATERIAL SAFETY DATA SHEET**  
Emergency Telephone (262) 251-4977

Name: **Alliance Group, Inc.** Address: N114 W18621 Clinton Drive  
City: Germantown State: Wisconsin Zip Code: 53022  
Product name: VOS-2  
Product code: 0002

**Section II - Hazardous Ingredient**

CAS Number	Chemical Component	%	TLV (ppm)	Hazard Data
3710-84-7	Diethylhydroxylamine	<10	Not Listed	LD50 Rat 2190 mg/kg
123-31-9	Hydroquinone	<5	2 mg/m3**	LD50 Rat 320 mg/kg

\*\*TWA = Time Weighed Average

**Section III - Physical Data**

Solid:	Liquid: X	Appearance:	Tan to Brown
Specific Gravity:	.955 - 1.05	Odor:	Mild Amine
Solubility in water:	Complete	Freezing Point:	25°F
% Volatiles:	~93	pH:	8.0 - 9.0
Vapor Density (air = 1) =	>1	Vapor Pressure:	Not available
Boiling Point:	Not available		

**Section IV - Fire and Explosive Data**

Flash Point: This product is not flammable or combustible.

Extinguishing Media: Water spray, CO2, dry chemical

Special Fire Hazards and Equipment Required: Firefighters should wear pressure demand self-contained breathing apparatus and protective clothing in areas where product is stored. Use water to keep fire - exposed containers cool.

Unusual Fire and Explosion Hazards: Product emits toxic gasses under fire conditions. Diethylhydroxylamine vapor is heavier than air and may travel a considerable distance to a source of ignition and flash back.

**Section V - Reactive Hazards**

Product	Hazardous	will not
Stable: No Yes X	Polymerization:	occur

Conditions to avoid: Minimize exposure to air and light. Hydroquinone will oxidize to quinone. Avoid overheating.

Incompatibility: strong oxidizing agents and strong acids. This product is also incompatible with carbon steel, copper, and polyvinylchloride.

Hazardous Decomposition Products: Carbon Monoxide, carbon dioxide, ammonia, diethylamine, and nitrogen oxides.

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### Section VI - Health Hazards

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Eyes: Eye irritant and possibly mild conjunctivitis.

Skin: Contact would be expected to cause irritation. Hydroquinone is an active allergen so repeated and prolonged contact may cause skin sensitization. Cases of dermatitis and depigmentation of the skin resulting from skin contact with hydroquinone have been reported. This product is not expected to be absorbed through the skin in harmful amounts.

Inhalation: Inhalation overexposure to mist or vapor may cause irritation of the nose and respiratory tract.

Ingestion: Based on the acute oral LD50 values of the components, this product would be considered slightly toxic by ingestion. Ingestion may cause irritation of the gastrointestinal tract and may produce nausea, dizziness, vomiting, and cyanosis.

Principal Routes of Exposure: Eye and skin contact, inhalation of mist or vapor.

Target Organs: Eyes, skin, blood, respiratory system.

Subchronic, Chronic Effects of Overexposure: No applicable information was found concerning any potential health effects resulting from subchronic or chronic exposure to the product.

In a 2 year study, no effect on final body weight, hematology, or pathology were observed in rats receiving a diet containing up to 1% hydroquinone. At 5% in the diet, weight loss, aplastic anemia, depletion of the bone marrow, liver cord cell atrophy, and superficial ulceration of the gastric mucosa were observed. When applied to the skin of mice, hydroquinone was not carcinogenic.

Developmental toxicity study with hydroquinone: Pregnant rats were given 0, 30, 100 or 300 mg/kg by gavage on days 6 - 15 of gestation. Maternal toxicity was seen as a slight statistically significant reduction in body weight gain and feed consumption at 300 mg/kg and there was a corresponding reduction in mean fetal body weight at this level. Reproductive indices of test dams were comparable to controls. No compound - related teratogenic effects were found.

#### Carcinogenicity:

NTP: No, NTP two year carcinogenesis study completed in May 1988 showed that hydroquinone, when administered by oral gavage in water, produced some evidence of kidney cancer in male rats. Some evidence of leukemia was seen in female rats while female mice exhibited some evidence of liver cancer. No adverse effects were reported in male mice.

IARC: No Hydroquinone is classified in Group 3 - inadequate animal evidence and no adequate human data.

OSHA: No ingredients listed.

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**FIRST AID PROCEDURE - Never give fluids or induce vomiting if patient is unconscious or having convulsions.  
CALL A PHYSICIAN**

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Eyes: Immediately flush with large amounts of cool water for 15 minutes holding lids apart. Seek medical aid.

Skin: Flush skin with plenty of cool water. Remove contaminated clothing and clean before reuse. If irritation persists call a physician.

Ingestion: Not an expected route of overexposure.

Inhalation: Not an expected route of overexposure.

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**Section VII - Normal Handling Procedures**

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Precautions to be taken in Handling and Storage:

Store in a secure, cool, dry area. Keep container tightly closed when not in use. Protect from damage. Do not store near oxidizing agents. Do not transfer to unlabelled containers. Avoid contact with eyes, skin and clothing. Avoid breathing mist or vapor. Use with adequate ventilation. Wash thoroughly after handling.

**NOT TO BE USED IN SYSTEMS WHERE  
THE STEAM PRODUCED IS USED FOR HUMIDIFICATION**

**PROTECTIVE EQUIPMENT**

Eyes: Chemical goggles, face shield

Gloves: Rubber

Other: Impervious clothing, eye bath, safety shower

Ventilation Requirements: Local exhaust ventilation to maintain airborne concentration below exposure limit. If airborne concentration exceed published exposure limits, use a NIOSH approved respirator in accordance with OSHA respiratory protection requirements (29 CFR 1910.134)

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**Section VIII - Spill or Leak Control Procedures**

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Steps to be taken in case of spill: Wear protective gear (See Sec VII) Contain spill, ventilate area. Collect in labeled, approved drums for disposal.

Waste disposal methods: Contact local environmental authorities.

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The above information is believed to be accurate and discloses the known hazards for this product as of this date. No additional warranties are made.

Date: May 5, 1995      By: D.C. Miller

	HMIS	NFPA	Key
Health	2	2	0 = minimal
Flammability	1	1	1 = slight
Reactive	0	0	2 = moderate
			3 = serious
			4 = severe

TSCA Status: The ingredients in this product are listed on the Toxic Substances Control Act Chemical Substance Inventory.

RCRA Status: This product as sold would not be considered a RCRA Hazardous Waste.

CERCLA reportable quantity of EPA hazardous substances in product: None

SARA Title III

Section 302 Extremely Hazardous Substances:

Hydroquinone CAS #123-31-9      RQ = 1 lb      TPQ = 500 lb

Section 311 and 312 Health and Physical Hazards:

Immediate = Yes    Delayed = Yes    Fire = No    Pressure = No    Reactivity = No

Section 313 Toxic Chemicals:

Hydroquinone CAS # 123-31-9    % by weight .75