

MATERIAL SAFETY DATA SHEET

The data provided here is for hazard communication to our employees, our customers and their employees, and authorized regulatory agencies. For the intended purpose, this MSDS may be duplicated or the data transcribed to an alternative form.

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The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment.

SECTION I

PRODUCT NAME: DARKENING SOLUTION **ITEM NUMBER:** J-3492 & J-3498 & J-3499

MANUFACTURED BY: *WSI Distributors*

CHEMICAL FAMILY: Dilute Aqueous Acid **CHEMICAL FORMULA:** N/A (Mixture)

NATIONAL FIRE PROTECTION ASSOCIATION CODES:
 NFPA HEALTH = 1 FLAMMABILITY = 0
 REACTIVITY = 0

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM:
 HMIS HEALTH = 1 FLAMMABILITY = 0
 REACTIVITY = 0 PERSONAL PROTECTION = B

DOT HAZARDOUS MATERIALS DESCRIPTION AND PROPER SHIPPING NAME (49 CFR 172.101) :
 Consumer Commodity ORM-D for containers of one gallon or less in size

DOT HAZARD CLASS (49 CFR 172.101) :
 Not applicable for ORM-D

SECTION II - INGREDIENTS

<u>DESCRIPTION</u>	<u>CAS NUMBER</u>	<u>PERCENT (basis)</u>	<u>TLV/TWA</u>
Water - H ₂ O	7732-18-5	over 97.6 (w/w)	None Established

None of the remaining ingredients is a known Carcinogen. Each of the remaining ingredients is present at a level below the de minimus concentration of 1%.

SECTION III - PHYSICAL DATA

BOILING POINT: Approximately 212° F

SPECIFIC GRAVITY (Water = 1): 1.01

VAPOR PRESSURE: No data

VOLATILE BY VOLUME: None (except water)

VAPOR DENSITY (Air = 1): Less than 1
(lighter than air)

EVAPORATION RATE (Ethyl Ether = 1): Greater
than 1 (slower than ethyl ether)

SOLUBILITY IN WATER: Completely soluble
in all proportions

pH: approximately 2

APPEARANCE & ODOR: Pale blue, odorless
liquid

TOTAL ACIDITY: Under 0.2N (to pH 7.0)

SECTION IV - FIRE AND EXPLOSION HAZARD

FLASH POINT (method): Non-flammable

LOWER EXPLOSIVE LIMIT (% in air): Not applicable

UPPER EXPLOSIVE LIMIT (% in air): Not applicable

EXTINGUISHING MEDIA: Non-flammable

SPECIAL FIRE FIGHTING PROCEDURES: Non-flammable

UNUSUAL FIRE AND EXPLOSION HAZARDS: Non-flammable. Non-explosive except with certain water-reactive substances

SECTION V - HEALTH HAZARD DATA

EYES:

Acute Overexposure Effects: This solution can be irritating to the eyes. If splashed into the eyes, it may cause a stinging sensation, blurred vision and redness of the eyes. Permanent damage would not normally be expected.

Emergency and First Aid: Immediately rinse eyes thoroughly with clean water, continuing rinsing for 15 minutes while occasionally pulling back the eyelids. If irritation persists, consult a physician.

Chronic Overexposure Effects: No data specific to chronic overexposure. See Acute above.

INHALATION:

Acute Overexposure Effects: Toxic fumes not normally generated. Breathing mists can result in lost sense of smell, nose and throat irritation, garlic odor of breath, headache, dizziness, lassitude, tremors, difficulty breathing, bronchitis, pneumonitis, bronchial asthma.

Emergency and First Aid: Remove from exposure. If breathing difficult, provide artificial respiration or oxygen. Consult a physician. Watch for delayed pulmonary edema. Diuretics speed elimination of selenium. Vitamin B Complex, Vitamin C and methionine supplements recommended.

SECTION V - HEALTH HAZARD DATA (continued)

Chronic Overexposure Effects: Beside effects as in ACUTE, chronic overexposure may cause weakness, pallor, anemia, enlargement of liver and degenerative changes in target organs. Preclude from contact with product those with Wilson's Disease or diseases of the skin, lungs, liver, kidneys, or gastrointestinal tract.

INGESTION:

Acute Overexposure Effects: Oral LD₅₀ (rats) is 10 g/kg. May produce metallic taste, garlic odor of breath, headache, dizziness, lassitude, nausea, vomiting, abdominal pain, diarrhea, difficulty breathing. Target organs: liver, kidneys, spleen, lungs, heart, adrenal glands, pancreas.

Emergency and First Aid: If breathing difficult, provide artificial respiration or oxygen. If victim is conscious and not vomiting, induce emesis. Seek medical attention. A diuretic will speed elimination of selenium. Vitamin B Complex, Vitamin C and methionine supplements are recommended.

Chronic Overexposure Effects: Same as INHALATION: CHRONIC OVEREXPOSURE above.

SKIN:

Acute Overexposure Effects: The product is not a primary skin irritant. Stinging may be expected from contact with cut or abraded skin. Redness of the skin and perhaps slight edema may result from prolonged or repeated contact. The product may cause sensitization in some individuals.

Emergency and First Aid: Remove contaminated clothing to avoid prolonged contact. Wash affected areas with soap and water. If irritation develops or persists, consult a physician.

Chronic Overexposure Effects: May cause skin sensitization resulting in irritation, dermatitis, or edema.

SECTION VI- REACTIVITY DATA

STABILITY: Stable

CONDITIONS TO AVOID: None known

INCOMPATIBILITY (materials to avoid): Cyanides, water reactive substances, organic solvents, oils, strong reducing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: Reaction with organics and strong reducing agents can produce volatile organoselenides or hydrogen selenide. Thermal decomposition after evaporation to dryness can produce selenium dioxide fumes and oxides of sulfur and phosphorus.

HAZARDOUS POLYMERIZATION: Will not occur

CONDITIONS TO AVOID: None known

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Review current local, state and federal laws, codes, statutes and regulations to determine the appropriate agencies to be notified, and the conditions under which they should be notified. Recover as much free liquid as possible and collect in acid resistant container. Use absorbent to pick up residue. Avoid discharging the liquid directly into a sewer or surface waters. CERCLA Reportable Quantity is 1 lb for Selenious acid (approximately 35 gal. of the product).

SECTION VII - SPILL OR LEAK PROCEDURES (continued)

WASTE DISPOSAL METHOD: Review current, local, state and federal laws, codes, statutes and regulations to determine the current status and appropriate disposal method for the ingredients listed in Section II. Waste Darkening Solution or its solutions are assigned the EPA Hazardous Waste Number D010 (Toxicity Characteristic-Selenium). Precipitates filtered from the operating bath or generated from treating the liquid are assigned the EPA Hazardous Waste Number D010 (Toxicity Characteristic-Selenium). The wastes can be disposed of through a licensed waste disposal company. To treat the liquid and convert it to a solid waste, add 2 ounces of degreased steel wool or steel machining fines or turnings per gallon of product. Stir frequently or continuously for at least 2 hours. Periodically adjust pH down to 1.5 with nitric acid. When reaction is complete, adjust pH to 8.0 with sodium bicarbonate or sodium hydroxide and filter. Liquid can go down the drain.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (type): Normally none required. High efficiency particulate filter respirator, supplied air respirator or self-contained breathing apparatus with full facepiece, helmet, or hood if misting is likely.

LOCAL EXHAUST VENTILATION (rate): To keep mists below TLV

MECHANICAL VENTILATION (rate): No information

SPECIAL VENTILATION: Equipment for containment and collection of mists if spray application is used

PROTECTIVE GLOVES (type): Rubber or plastic gloves

EYE PROTECTION (type): Glasses, goggles or face shield

OTHER PROTECTIVE EQUIPMENT: As appropriate to operation to guard against contamination of clothing and prolonged or repeated contact with the skin.

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: (See also Sections II, IV, and VII.) :
Avoid co-loading or storing with cyanides, water reactive substances or strong reducing agents. Store in acid resistant containers. Protect containers from physical damage.

OTHER PRECAUTIONS: Workers handling the product should wash before smoking or eating.

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