

# Material Safety Data Sheet

SILVER TEST SOLUTION

February 23, 2011

## SECTION - 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

EURO TOOL, Inc.  
14101 Botts Rd.  
Grandview, MO 64030

### EMERGENCY TELEPHONE NUMBER

INFOTRAC (800) 535-5053

## SECTION - 2 COMPOSITION INFORMATION

COMPONENT	CAS #	PERCENT
Nitric Acid	7697-37-2	28 to 40%
Potassium Dichromate	7778-50-9	4%

## SECTION - 3 HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

**POISON! DANGER!** Extremely hazardous in case of skin contact, inhalation or ingestion. **(Corrosive, Sensitizer, Permeator, Carcinogenic).** **STRONG OXIDIZER.** Contact with other material may cause fire.

**CORROSIVE!** Liquid and mist cause severe burns to all body tissue. May be fatal if swallowed or inhaled. Inhalation may cause lung damage. Repeated or prolonged exposure to the substance can produce target organs damage.

### POTENTIAL ACUTE HEALTH EFFECTS

**Eye Contact:** Corrosive! Vapors are irritating and may cause damage to the eyes.

**Skin Contact:** Corrosive! Can cause redness, pain, and severe skin burns.

**Inhalation:** Corrosive! Vapor is extremely hazardous. Inhalation of vapors can cause breathing difficulties and can cause irritation of the mucous membranes and respiratory tract with burning pain in the nose and throat, coughing, choking, sneezing, wheezing, shortness of breath, bronchial infection and pulmonary edema. Other symptoms may include nausea, and vomiting.

**Ingestion:** Corrosive! Swallowing nitric acid can cause immediate pain and burns of the mouth, throat, esophagus and gastrointestinal tract.

### POTENTIAL CHRONIC HEALTH EFFECTS

**Eye Contact:** Corrosive! Contact may cause severe burns and permanent eye damage.

**Skin Contact:** Corrosive! Poison! Causes skin burns and may cause deep and penetrating ulcers of the skin with a characteristic yellow to brownish discoloration. May be fatal if absorbed through skin.

**Inhalation:** Corrosive! Poison! May be fatal if inhaled. Vapor is extremely hazardous. Vapor may cause nitrous gas poisoning. Effects may be delayed. May cause irritation of the mucous membranes and respiratory tract with burning pain in the nose and throat, coughing, sneezing, wheezing, shortness of breath, bronchial infection and pulmonary edema. Other symptoms may include nausea, and vomiting.

**Ingestion:** Corrosive! Poison! May be fatal if swallowed. Causes serious gastrointestinal tract irritation or burns with nausea, vomiting, severe abdominal pain, and possible "coffee grounds" appearance in the vomit. May cause perforation of the digestive tract.

### TARGET ORGANS

The substance can be toxic to blood, kidneys, lungs, liver, cardiovascular system, central nervous system, lungs, mucous membranes, upper respiratory tract, skin, eyes, and teeth. May cause headache, dizziness, drowsiness, muscle contraction or spasticity, weakness, loss of coordination and may affect behavior or cause mental confusion. May affect urinary system leading to possible kidney failure.

Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

### AGGRAVATION OF PRE-EXISTING CONDITIONS

Persons with pre-existing skin disorders, eye disease, or cardiopulmonary (heart and respiratory) diseases may be more susceptible to the effects of this substance.

CARCINOGENIC	NTP	ACGIH	IARC	PERCENT
Nitric Acid	Not Listed	Not Listed	Not Listed	
Potassium Dichromate	Known carcinogen	A1: Confirmed for human	Group 1: Carcinogenic to humans	4%

### TERATOGENIC EFFECTS

Not available.

### DEVELOPMENTAL TOXICITY

Not available.

### MUTAGENIC EFFECTS

Mutagenic for mammalian somatic cells, bacteria and/or yeast.

Silver Test Acid  
717050

**SECTION – 4 FIRST AID MEASURES****EYE CONTACT**

Immediately flush eyes with cold water for at least 15 minutes while lifting upper and lower eyelids. Be sure to remove any contact lenses. Obtain immediate medical attention.

**SKIN CONTACT**

Immediately flush skin with plenty of water for at least 15 minutes while removing any contaminated clothing or shoes. Cover the irritated skin with an emollient. Obtain immediate medical attention. Wash any contaminated clothing and/or shoes before reuse.

**INHALATION**

Immediately remove victim to fresh air. If breathing is difficult, give oxygen if available and obtain immediate medical attention. If not breathing, give artificial respiration. *WARNING:* It may be hazardous to the person providing artificial respiration when the inhaled material is toxic, infectious or corrosive.

**INGESTION**

DO NOT INDUCE VOMITING. If person is fully conscious, give one to two glasses of water or milk and obtain immediate medical attention.

**SECTION – 5 FIRE FIGHTING MEASURES****FIRE**

Not combustible, but substance is a strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition. Can react with metals to release flammable hydrogen gas and toxic fumes of potassium oxide.

**EXPLOSION**

Reacts explosively with combustible organic or readily oxidizable materials such as: alcohols, turpentine, charcoal, organic refuse, metal powder, hydrogen sulfide, hydrazine and anhydrous hydroxylamine.etc. Reacts with most metals to release hydrogen gas which can form explosive mixtures with air.

**FIRE EXTINGUISHING MEDIA**

Water spray may be used to keep fire exposed containers cool. Do not get water inside container.

**SPECIAL INFORMATION**

Increases the flammability of combustible, organic and readily oxidizable materials. In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

**SECTION – 6 ACCIDENTAL RELEASE MEASURES**

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Neutralize with alkaline material (soda ash, lime), then absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities.

**SECTION – 7 HANDLING AND STORAGE**

Oxidizing materials should be stored in a separate safety storage cabinet or room that is cool, dry, ventilated and acid resistant. Protect from physical damage. Keep out of direct sunlight and away from heat, water, and incompatible materials. Do not wash out container and use it for other purposes. When diluting, the acid should always be added slowly to water and in small amounts. Never use hot water and never add water to the acid. Water added to acid can cause uncontrolled boiling and splashing. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

**SECTION – 8 EXPOSURE CONTROLS/PERSONAL PROTECTION****EXPOSURE LIMITS**

COMPONENT	CAS #	OSHA PEL	OSHA PEL	ACGIH	ACGIH
		TWA	STEL	TWA	STEL
Nitric Acid	7697-37-2	2 ppm	4 ppm	2 ppm	4 ppm
Potassium Dichromate	7778-50-9	0.1 mg/m <sup>3</sup>		0.05 mg/m <sup>3</sup>	

**ENGINEERING CONTROLS**

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

**PERSONAL PROTECTION**

**Eyes:** Wear Chemical Safety Goggles and/or Face Shield to protect eyes and face.

**Skin:** Sleeved Length Impervious Rubber Gloves or approved equivalent for handling and use. Wear Rubber boots, Impervious Rubber Apron or Suit when appropriate for use.

**Respirator:** Use a NIOSH approved/certified Full Face Vapor Respirator or a Positive Pressure Self Contained Breathing Apparatus.

## SECTION – 9 PHYSICAL AND CHEMICAL PROPERTIES

**APPEARANCE**

Reddish liquid.

**ODOR**

Suffocating, acrid.

**SOLUBILITY**

Infinitely soluble.

**SPECIFIC GRAVITY**

1.35

**pH**

1.0 (0.1M solution)

**% VOLATILES BY VOLUME @ 21C (70F)**

100 (as water and acid)

**BOILING POINT**

122C (252F)

**MELTING POINT**

-42C (-44F)

**VAPOR DENSITY (AIR=1)**

2-3

**Vapor Pressure (mm Hg)**

48 @ 20C (68F)

## SECTION – 10 STABILITY AND REACTIVITY

**STABILITY**

Stable under ordinary conditions of use and storage. Containers may burst when heated.

**HAZARDOUS DECOMPOSITION PRODUCTS**

When heated to decomposition, emits toxic nitrogen oxides fumes and hydrogen nitrate. Will react with water or steam to produce heat and toxic and corrosive fumes. (Nitric acid, fuming)

**HAZARDOUS POLYMERIZATION**

Will not occur.

**INCOMPATIBILITIES**

Nitric Acid is a dangerously powerful oxidizing agent and is incompatible with most substances, especially strong bases, metallic powders, carbides, hydrogen sulfide, turpentine, charcoal and combustible organics.

**CONDITIONS TO AVOID**

Light, heat and incompatible materials.

## SECTION – 11 TOXICOLOGICAL INFORMATION

**TOXICITY**

COMPONENT		FORM	SUBJECT	RESULT VALUE	EXPOSURE TIME
Nitric Acid	LC50	Inhaled	Rat	217 ppm	4 Hr
Potassium Dichromate	LD50	Oral	Rat	25 mg/kg	
	LC50	Skin	Rabbit	14 mg/kg	
Lowest Published Lethal Dose	LDL	Oral	Man	143 mg/kg	
For Potassium Dichromate	LDL	Oral	Child	26 mg/kg	

## SECTION – 12 ECOLOGICAL INFORMATION

**ECOTOXICITY**

COMPONENT		SUBJECT	RESULT VALUE	EXPOSURE TIME
Potassium Dichromate	LC50	Striped bass	75 mg/l	96 Hr
	LC50	Daphnia	1.5 mg/l	24 Hr
	LC50	Fathead minnow	17.3 mg/l	11 Hr

**BOD5 and COD**

No data available.

**PRODUCTS OF BIODEGRADATION**

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise. Chromium probably occurs as the insoluble (CrIII) oxide (Cr2O3.nH2O) in the soil, as the organic matter in the soil is expected to reduce any soluble chromate to insoluble chromic oxide (Cr2O3). Chromium in the soil can be transported to the atmosphere by way of aerosol formation. Chromium is also transported from the soil through runoff and leaching of water. Most of the chromium in surface waters may be present in particulate form as sediment. Some of the particulate chromium would remain as suspended matter and ultimately be deposited in the sediments. Chromium present usually as (CrIII) in the soil and is characterized by its lack of mobility, except in cases where Cr(VI) is involved. Chromium (VI) of natural origin is rarely found.

**TOXICITY OF THE PRODUCTS OF BIODEGRADATION**

The products of degradation are more toxic. Dangerous to aquatic life in high concentrations.

**SECTION – 13 DISPOSAL CONSIDERATIONS**

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. This product would be classified as a RCRA hazardous waste and requires appropriate analysis to determine specific disposal requirements. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

**SECTION – 14 TRANSPORT INFORMATION**

**D.O.T. CLASSIFICATION**

<b>UN NUMBER</b>	UN2031	<b>LABEL CODES</b>	Corrosive, Poison, Oxidizer, Carcinogenic
<b>PROPER SHIPPING NAME</b>	NITRIC ACID	<b>REPORTABLE QUANTITY</b>	1000 LBS
<b>HAZARD CLASS</b>	8	<b>EMERGENCY RESPONSE NUMBER</b>	157
<b>PACKING GROUP</b>	PGII	<b>MARINE POLLUTANT</b>	Yes

**HMIS National Fire Protection Association**

<b>Health Hazard</b>	4	<b>Health</b>	4
<b>Fire Hazard</b>	0	<b>Flammability</b>	0
<b>Reactivity</b>	2	<b>Reactivity</b>	2
<b>Personal Protection</b>		<b>Specific hazard</b>	Oxidizer

**SECTION – 15 REGULATORY INFORMATION**

<u>TSCA</u>	CAS No.	Sec 8(b) Inventory	Sec 8(d) Health & Safety	Sec 4(a) Chemical Test Rules	Sec 12(b) Export Notification
Nitric Acid	7697-37-2	Yes	Yes	Yes	Yes
Potassium Dichromate	7778-50-9	Yes	Yes	Yes	Yes

<u>Reportable Quantities</u>	CAS No.	EPCRA TPQ Sec. 302	EPCRA RQ Sec. 304	CERCLA RQ Sec. 103	TRI Sec. 313	RCRA Code	RMP TQ Sec. 112r
Nitric acid	7697-37-2	1,000	1,000	1,000	Y		
Potassium Dichromate	7778-50-9			10	Y		

<u>SARA</u>	Sec 313	Sec 311 & 312 Hazards					Sec. 302
Chemical Name	Acute	Chronic	Flammable	Pressure	Reactive	Extremely Hazardous Substance	
Nitric acid	Yes	Yes	Yes	No	Yes	Yes	
Potassium Dichromate	Yes	Yes	Yes	No	Yes	Yes	

<u>Right To Know</u>	CAS No.	STATE												
Chemical Name		CA	CT	FL	IL	LA	NJ	NY	PA	MI	MN	MA	RI	WI
Nitric acid	7697-37-2			Y			Y	Y	Y	Y	Y	Y	Y	
Potassium Dichromate	7778-50-9	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

<u>CALIFORNIA</u>	WARNING! This product contains chemicals known to the state of California to cause:				
<u>Proposition 65</u>	CAS No.	Birth Defects	Reproductive Harm	Carcinogen	Developmental
Nitric acid	7697-37-2	No	No	No	No
Potassium Dichromate	7778-50-9	Yes	Yes	Yes	No

<u>Clean Air &amp; Water Acts</u>	CAS No.	CAA HAP	Ozone Class 1	Ozone Class 2	CWA HS	PP	TP
Nitric acid	7697-37-2				Yes		
Potassium Dichromate	7778-50-9				Yes		

**INTERNATIONAL REGULATIONS**

The components of this product are listed on the chemical inventories of the following countries

Chemical Name	Australia	Canada	Europe (EINECS)	Japan	Korea	UK
Nitric Acid	Yes	Yes	Yes	Yes	Yes	Yes
Potassium Dichromate	Yes	Yes	Yes	Yes	Yes	Yes

## SECTION – 15 REGULATORY INFORMATION (CONTINUED)

**WHMIS Classification (CANADA)**

Chemical Name	DSL	CLASS	DEFINITION
Nitric Acid	Yes	D-1A	Material causing immediate and serious toxic effects (VERY TOXIC).
Potassium Dichromate	Yes	D-2A	Material causing other toxic effects (VERY TOXIC).
		E	Corrosive Liquid
		C	Oxidizing material.

DSCL (EEC)	CODE	DEFINITION
Nitric Acid	R8	Contact with combustible material may cause fire.
	R35	Causes severe burns.
	R37	Irritating to respiratory system.
Potassium Dichromate	R21	Harmful in contact with skin.
	R25	Toxic if swallowed.
	R41	Risk of serious damage to eyes.
	R43	May cause sensitization by skin contact.
	R46	May cause heritable genetic damage.
	R49	May cause cancer by inhalation.
	R50	Very toxic to aquatic organisms.
	R53	May cause long-term adverse effects in the aquatic

## SECTION – 16 OTHER INFORMATION

Source Information	Chemical	Cas No.	Revision Date
Mallinckrodt Baker, Inc. Science Laboratory	Nitric Acid	7697-37-2	2/15/2008
CEPP	Nitric Acid	7697-37-2	3/5/2009
OSHA	Nitric Acid	7697-37-2	3/5/2009
EMD Chemicals Inc	Nitric Acid	7697-37-2	3/27/2003
Mallinckrodt Baker, Inc. Science Laboratory	Potassium Dichromate	7778-50-9	6/9/2005
	Potassium Dichromate	7778-50-9	11/6/2008