

Material Safety Data Sheet

According to OSHA and ANSI

Printing date 05/28/2011

Reviewed on 10/30/2009

1 Identification of the substance/mixture and of the company/undertaking**Product identifier****Product name:** Gold etchant**Stock number:** 44584**CAS Number:**

7553-56-2

Relevant identified uses of the substance or mixture and uses advised against.**Sector of Use** SU24 Scientific research and development**Details of the supplier of the safety data sheet****Manufacturer/Supplier:**

Alfa Aesar, A Johnson Matthey Company

Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Tel: 800-343-0660

Fax: 800-322-4757

Email: tech@alfa.com

www.alfa.com

Information Department: Health, Safety and Environmental Department**Emergency telephone number:**

During normal hours the Health, Safety and Environmental Department at (800) 343-0660. After normal hours call Carechem 24 at (866) 928-0789.

2 Hazards identification**Classification of the substance or mixture**

GHS06 Skull and crossbones

H311 Toxic in contact with skin.



GHS05 Corrosion

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.



GHS09 Environment

H400 Very toxic to aquatic life.



GHS07

H332 Harmful if inhaled.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

C; Corrosive

R34: Causes burns.



Xn; Harmful

R20/21: Harmful by inhalation and in contact with skin.



N; Dangerous for the environment

R50: Very toxic to aquatic organisms.

Label elements**Labelling according to EU guidelines:****Code letter and hazard designation of product:**

C Corrosive

N Dangerous for the environment

Risk phrases:

20/21 Harmful by inhalation and in contact with skin.

34 Causes burns.

50 Very toxic to aquatic organisms.

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Safety phrases:

- 9 Keep container in a well-ventilated place.
 25 Avoid contact with eyes.
 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
 45 In case of accident or if you feel unwell, seek medical advice immediately.
 61 Avoid release to the environment. Refer to special instructions/Safety data sheets

Hazard description:**WHMIS classification****Classification system****HMIS ratings (scale 0-4)**

(Hazardous Materials Identification System)

HEALTH	2
FIRE	0
REACTIVITY	0

Health (acute effects) = 2

Flammability = 0

Reactivity = 0

Other hazards**Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.**3 Composition/information on ingredients****Chemical characterization: Substances****(CAS#) Description:**

Iodine (CAS# 7553-56-2): 1-10%
 Potassium iodide (CAS# 7681-11-0): 20-40%
 Water (CAS# 7732-18-5): Balance

4 First aid measures**Description of first aid measures****General information** Immediately remove any clothing soiled by the product.**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly. Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek immediate medical advice.**5 Firefighting measures****Extinguishing media****Suitable extinguishing agents**

Product is not flammable. Use fire fighting measures that suit the surrounding fire.

Special hazards arising from the substance or mixture

In case of fire, the following can be released:

Hydrogen iodide (HI)

Advice for firefighters**Protective equipment:**

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures**Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

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Environmental precautions:

Do not allow material to be released to the environment without proper governmental permits.

Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Use neutralizing agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Reference to other sections

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage**Handling****Precautions for safe handling**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Information about protection against explosions and fires: The product is not flammable**Conditions for safe storage, including any incompatibilities****Storage****Requirements to be met by storerooms and receptacles:** No special requirements.**Information about storage in one common storage facility:**

Aqueous solutions are incompatible with alkali and alkaline earth metals and many reactive organic and inorganic chemicals.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

8 Exposure controls/personal protection**Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Control parameters**Components with limit values that require monitoring at the workplace:**

Iodine

	ppm
ACGIH TLV	0.1-Ceiling
Austria MAK	0.1
Belgium TWA	0.1-STEL
Denmark TWA	0.1
Finland TWA	0.1-STEL (skin)
France VME	0.1
Germany MAK	0.1-STEL
Hungary TWA	1 mg/m ³ ; 2 mg/m ³ -STEL
Korea TLV	0.1-Ceiling
Netherlands MAC-TGG	0.1
Norway TWA	0.1
Poland TWA	1 mg/m ³
Russia	0.1; 1-STEL (skin)
Sweden TWA	0.1-Ceiling
Switzerland MAK-W	0.1
United Kingdom TWA	0.1-STEL
USA PEL	0.0-Ceiling

Additional information: No data**Exposure controls****Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Breathing equipment: Use suitable respirator when high concentrations are present.**Protection of hands:**

Impervious gloves

Check protective gloves prior to each use for their proper condition.

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Material of gloves

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Eye protection:

Safety glasses

Tightly sealed goggles

Full face protection

Body protection: Protective work clothing.**9 Physical and chemical properties****Information on basic physical and chemical properties****General Information****Appearance:**

Form:	Liquid
Color:	Brown
Odor:	Not determined
Odour threshold:	Not determined.

pH-value:	Not determined.
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Change in condition

Melting point/Melting range:	Not determined
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined

Flash point:	Not applicable
	Not determined

Flammability (solid, gaseous)	Not applicable.
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Ignition temperature:	Not determined
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Decomposition temperature:	Not determined
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Auto igniting:	Not determined.
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Danger of explosion:	Product does not present an explosion hazard.
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Explosion limits:

Lower:	Not determined
Upper:	Not determined

Vapor pressure:	Not determined
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Density:	Not determined
Relative density	Not determined.
Vapour density	Not determined.
Evaporation rate	Not determined.

Solubility in / Miscibility with

Water:	Fully miscible
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Segregation coefficient (n-octanol/water):	Not determined.
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Viscosity:

dynamic:	Not determined.
kinematic:	Not determined.

Other information	No further relevant information available.
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10 Stability and reactivity**Reactivity****Chemical stability****Thermal decomposition / conditions to be avoided:**

Decomposition will not occur if used and stored according to specifications.

Possibility of hazardous reactions

Reacts with alkali metals.

Reacts with alkaline earth metals.

Incompatible materials:

Aqueous solutions are incompatible with alkali and alkaline earth metals and many reactive organic and inorganic chemicals.

Hazardous decomposition products: Hydrogen iodide (HI)

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11 Toxicological information**Information on toxicological effects****Acute toxicity:****Primary irritant effect:****on the skin:**

Corrosive effect on skin and mucous membranes.

Irritant to skin and mucous membranes.

on the eye:

Strong corrosive effect.

Irritating effect.

Sensitization: No sensitizing effects known.**Subacute to chronic toxicity:**

Prolonged exposure to iodides may cause skin rash, running nose, headache and irritation of the mucous membranes. In severe cases the skin may show pimples, boils, redness, black and blue spots, hives and blisters. Iodides are readily diffused across the placenta. Elemental iodine is highly irritating to the skin, eyes, and mucous membranes. Ingestion may cause abdominal pain, nausea, vomiting and diarrhea. Severe cases may cause circulatory failure.

Subacute to chronic toxicity:

Corrosive materials are acutely destructive to the respiratory tract, eyes, skin and digestive tract. Eye contact may result in permanent damage and complete vision loss. Inhalation may result in respiratory effects such as inflammation, edema, and chemical pneumonitis. May cause coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. Ingestion may cause damage to the mouth, throat and esophagus. May cause skin burns or irritation depending on the severity of the exposure.

Additional toxicological information:

Danger through skin absorption.

Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12 Ecological information**Toxicity****Acquatic toxicity:** No further relevant information available.**Persistence and degradability** No further relevant information available.**Behavior in environmental systems:****Bioaccumulative potential** No further relevant information available.**Mobility in soil** No further relevant information available.**Ecotoxicological effects:****Remark:** Very toxic for aquatic organisms**Additional ecological information:****General notes:**

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Do not allow material to be released to the environment without proper governmental permits.

Very toxic for aquatic organisms

Results of PBT and vPvB assessment**PBT:** Not applicable.**vPvB:** Not applicable.**Other adverse effects** No further relevant information available.**13 Disposal considerations****Waste treatment methods****Recommendation** Consult state, local or national regulations to ensure proper disposal.**Uncleaned packagings:****Recommendation:** Disposal must be made according to official regulations.**Recommended cleansing agent:** Water, if necessary with cleansing agents.

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14 Transport information**DOT regulations:**

Hazard class: 8
Identification number: UN3264
Packing group: III
Proper shipping name (technical name): CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (iodine/potassium iodide solution)
Label 8

Land transport ADR/RID (cross-border)

ADR/RID class: 8 (C1) Corrosive substances
Danger code (Kemler): 80
UN-Number: 3264
Packaging group: III
Special marking: Symbol (fish and tree)
UN proper shipping name: 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (iodine/potassium iodide solution)

Maritime transport IMDG:

IMDG Class: 8
UN Number: 3264
Label 8
Packaging group: III
Marine pollutant: No
Segregation groups Acids
Proper shipping name: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (iodine/potassium iodide solution)

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 8
UN/ID Number: 3264
Label 8
Packaging group: III
Proper shipping name: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (iodine/potassium iodide solution)

UN "Model Regulation": UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S., 8, III
Environmental hazards: Environmentally hazardous substance, liquid; Marine Pollutant
Special precautions for user Warning: Corrosive substances
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

Product related hazard informations:

Hazard symbols:
 C Corrosive
 N Dangerous for the environment

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Risk phrases:

20/21 Harmful by inhalation and in contact with skin.
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 50 Very toxic to aquatic organisms.

Safety phrases:

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National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

Information about limitation of use: For use only by technically qualified individuals.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department.

Contact:

Zachariah C. Holt
 Global EHS Manager

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 IMDG: International Maritime Code for Dangerous Goods
 DOT: US Department of Transportation
 IATA: International Air Transport Association
 IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
 ICAO: International Civil Aviation Organization
 ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 HMIS: Hazardous Materials Identification System (USA)
 WHMIS: Workplace Hazardous Materials Information System (Canada)

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