

This safety data sheet was created pursuant to the requirements of: OSHA HCS2012

Revision date 05-Mar-2024 Revision Number 1.01

1. Identification

Product identifier

Product Name Calibration Mix 2: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Ni, Pb, Se, Tl, Th, U, V, Zn (100

mg/L) in 5% HNO3

Other means of identification

Product Code(s) 6610030600

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended use Reagents and Standards for Analytical Chemical Laboratory Use

Restrictions on use Not to be used for human or animal consumption

Details of the supplier of the safety data sheet

Supplier Address

Agilent Technologies, Inc. 5301 Stevens Creek Blvd Santa Clara, CA 95051, USA

800-227-9770

E-mail pdl-msds_author@agilent.com

Emergency telephone number

Emergency Telephone

CHEMTREC®: 1-800-424-9300

2. Hazard(s) identification

Classification

Classified according to OSHA.

| Skin corrosion/irritation | Category 2 |
|-----------------------------------|------------|
| Serious eye damage/eye irritation | Category 1 |
| Chronic aquatic toxicity | Category 1 |
| Corrosive to metals | Category 1 |

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Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Danger

Hazard statements

Classified according to OSHA.
Causes skin irritation
Causes serious eye damage
Very toxic to aquatic life with long lasting effects
May be corrosive to metals



Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling Keep only in original packaging Wear protective gloves/eye protection/face protection

Precautionary Statements - Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing Immediately call a POISON CENTER or doctor IF ON SKIN: Wash with plenty of water and soap If skin irritation occurs: Get medical advice/attention Take off contaminated clothing and wash it before reuse Absorb spillage to prevent material damage

Precautionary Statements - Storage

Store in corrosion resistant container with a resistant inner liner

Other information

Toxic to aquatic life.

3. Composition/information on ingredients

Substance

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Not applicable.

Mixture

Chemical nature aqueous solution.

| Chemical name | CAS No. | Weight-% | Trade secret |
|---------------|-----------|----------|--------------|
| Nitric Acid | 7697-37-2 | 3 - <5 | * |

Additional information

The concentration of the acid stated in this SDS is calculated as an absolute mass concentration (%w/v). This is less than the acid concentration stated on the product label and COA, which reflects a percent value of the commercially available concentrated aqueous form of the acid.

4. First-aid measures

Description of first aid measures

General advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is

required.

Inhalation Remove to fresh air. Get medical attention immediately if symptoms occur.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open

while rinsing. Do not rub affected area. Get immediate medical attention.

Skin contactWash off immediately with soap and plenty of water for at least 15 minutes. Get medical

attention if irritation develops and persists.

Ingestion Rinse mouth. Never give anything by mouth to an unconscious person. Do NOT induce

vomiting. Call a physician.

Self-protection of the first aider Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Symptoms Burning sensation.

Indication of any immediate medical attention and special treatment needed

Note to physiciansTreat symptomatically.

5. Fire-fighting measures

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surrounding environment.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the

chemical

No information available.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Special protective equipment and precautions for fire-fighters

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

Use personal protection equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal

protective equipment as required.

Other information Refer to protective measures listed in Sections 7 and 8.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers.

7. Handling and storage

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with

skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off

contaminated clothing and wash before reuse.

Conditions for safe storage, including any incompatibilities

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Storage Conditions

Please refer to the manufacturer's certificate for specific storage and transport temperature conditions. Store only in the original receptacle unless other advice is given on the CoA. Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.

8. Exposure controls/personal protection

Control parameters

Exposure Limits

| Chemical name | ACGIH TLV | OSHA PEL | NIOSH |
|---------------|-------------|--------------------------------------|----------------------------|
| Nitric Acid | TWA: 2 ppm | TWA: 2 ppm | IDLH: 25 ppm |
| 7697-37-2 | STEL: 4 ppm | TWA: 5 mg/m ³ | TWA: 2 ppm |
| | | (vacated) TWA: 2 ppm | TWA: 5 mg/m ³ |
| | | (vacated) TWA: 5 mg/m ³ | STEL: 4 ppm |
| | | (vacated) STEL: 4 ppm | STEL: 10 mg/m ³ |
| | | (vacated) STEL: 10 mg/m ³ | |

Biological occupational exposure limits

Appropriate engineering controls

Engineering controls Showers

Eyewash stations Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Avoid contact with eyes. Wear safety glasses with side shields (or goggles). Tight sealing

safety goggles.

Hand protection Wear protective Neoprene™ gloves. The protective gloves to be used must comply with the

specifications of EC Directive 89/686/EEC and the related standard EN374. Wear suitable

gloves. Impervious gloves.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are

exceeded or irritation is experienced, ventilation and evacuation may be required.

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Environmental exposure controls Do not allow into any sewer, on the ground or into any body of water.

Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this **General hygiene considerations**

product. Wash hands before breaks and after work. Wear suitable gloves and eye/face protection. Regular cleaning of equipment, work area and clothing is recommended.

None known

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state Liquid **Appearance** Liquid colorless Color Odorless Odor

Odor threshold No information available

Remarks • Method Property Values

No data available None known pН No data available None known Melting point / freezing point Initial boiling point and boiling rangeNo data available None known Flash point No data available None known No data available **Evaporation rate** None known **Flammability** No data available None known

Flammability Limit in Air None known

Upper flammability or explosive No data available

limits

Lower flammability or explosive No data available

limits

No data available None known Vapor pressure Relative vapor density No data available None known Relative density No data available None known Water solubility No data available None known Solubility(ies) No data available None known **Partition coefficient** No data available None known **Autoignition temperature** 460 None known

Decomposition temperature None known Kinematic viscosity No data available None known

No data available

Other information

Dynamic viscosity

No information available **Explosive properties** No information available **Oxidizing properties** Softening point No information available Molecular weight No information available **VOC** content No information available **Liquid Density** No information available

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Bulk density No information available

10. Stability and reactivity

Reactivity No information available.

Chemical stability Stable under normal conditions.

Possibility of hazardous reactions
None under normal processing.

Conditions to avoid Exposure to air or moisture over prolonged periods.

Incompatible materials Oxidizing agent. Strong acids. Strong bases.

Hazardous decomposition products None known based on information supplied.

11. Toxicological information

Information on likely routes of exposure

Product Information

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available. Causes serious eye damage.

May cause irreversible damage to eyes.

Skin contact Specific test data for the substance or mixture is not available. Causes skin irritation. (based

on components).

Ingestion Specific test data for the substance or mixture is not available. Ingestion may cause

gastrointestinal irritation, nausea, vomiting and diarrhea.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Redness. Burning. May cause blindness. May cause redness and tearing of the eyes.

Acute toxicity

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document

 ATEmix (oral)
 99,999.00 mg/kg

 ATEmix (dermal)
 99,999.00 mg/kg

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ATEmix (inhalation-gas)99,999.00 ppmATEmix (inhalation-dust/mist)99,999.00 mg/lATEmix (inhalation-vapor)58.90 mg/l

Component Information

| Component initermation | | | |
|------------------------|-----------|-------------|---------------------------|
| Chemical name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
| Nitric Acid | - | - | = 2500 ppm (Rat) 1 h |
| 7697-37-2 | | | ATE (vapours) = 2.65 mg/L |

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Classification based on data available for ingredients. Causes skin irritation.

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes burns. Causes serious eye

damage.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Target organ effects Respiratory system, Eyes, Skin, Teeth.

Aspiration hazard No information available.

Other adverse effects No information available.

Interactive effects No information available.

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12. Ecological information

Ecotoxicity Very toxic to aquatic life with long lasting effects.

Persistence and degradability No information available.

Bioaccumulation There is no data for this product.

Component Information

| Chemical name | Partition coefficient | |
|---------------|-----------------------|--|
| Nitric Acid | -2.3 | |
| 7697-37-2 | | |

Other adverse effects No information available.

13. Disposal considerations

Disposal methods

Waste from residues/unused

products

Dispose of in accordance with local regulations. Dispose of waste in accordance with

environmental legislation.

Contaminated packaging Do not reuse empty containers.

California Hazardous Waste Status This product contains one or more substances that are listed with the State of California as

a hazardous waste.

14. Transport information

DOT

UN number or ID number UN3264

Extended proper shipping name Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid)

Transport hazard class(es) 8
Packing group III

Reportable Quantity (RQ) (Nitric Acid: RQ (kg)= 454.00, Arsenic: RQ (kg)= 0.45) Nitric Acid: RQ (lb)= 1000.00,

Arsenic: RQ (lb)= 1.00

Reportable quantity (kg)

(calculated)

Nitric Acid: RQ (kg)= 10088.89, Arsenic: RQ (kg)= 4540.00

Reportable quantity (lbs) Nitric Acid: RQ (lb)= 22222.00, Arsenic: RQ (lb)= 10000.00

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(calculated)

Special Provisions IB3, T7, TP1, TP28

DOT Marine Pollutant

Marine pollutant Silver, Cadmium

Description UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III

Emergency Response Guide 154

Number

TDG

UN number or ID number UN3264

UN proper shipping name Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid)

Transport hazard class(es) 8
Packing group III
Special Provisions 16
Marine pollutant NP

Description UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III

MEX

UN number or ID number UN3264

UN proper shipping name Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid)

Transport hazard class(es) 8
Packing group | |||

Technical Name Nitric Acid

Description UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III

Special Provisions 223, 274

IATA

UN number or ID number UN3264

UN proper shipping nameCorrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid)

Transport hazard class(es) 8
Packing group ||||

Technical Name Nitric Acid

Description UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III

Special Provisions A3, A803 ERG Code 8L

IMDG

UN number or ID number UN3264

UN proper shipping nameCorrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid, Manganese(II) nitrate hexahydrate)

Transport hazard class(es) 8
Packing group III
EmS-No. F-A, S-B
Special Provisions 223, 274
Marine pollutant P

Marine Pollutant Silver

Description UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid, Silver), 8, III, Marine

pollutant

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15. Regulatory information

International Inventories

TSCA Complies under research and development exemption or is regulated by a different

government agency.

| Chemical name | CAS No. | Inventory Listing Status | Commercial Activity Designation |
|---------------|-----------|--------------------------|---------------------------------|
| Nitric Acid | 7697-37-2 | Present | Active |

^{*}Contact supplier for details. One or more substances in this product are either not listed on the US TSCA inventory, listed on the confidential US TSCA inventory or are otherwise exempted from inventory listing requirements

DSL/NDSL

EINECS/ELINCS

Contact supplier for inventory compliance status.

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

| Chemical name | SARA 313 - Threshold Values % | |
|-------------------------|-------------------------------|--|
| Nitric Acid - 7697-37-2 | 1.0 | |

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SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

| Chemical name | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|---------------|--------------------------------|------------------------|---------------------------|-------------------------------|
| Nitric Acid | 1000 lb | - | - | X |
| 7697-37-2 | | | | |

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

| Chemical name | Hazardous Substances RQs | Extremely Hazardous Substances RQs | Reportable Quantity (RQ) |
|--------------------------|--------------------------|------------------------------------|---|
| Nitric Acid 7697-37-2 | 1000 lb | 1000 lb | RQ 1000 lb final RQ RQ 454 kg final RQ |

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals:.

| Chemical name | California Proposition 65 | |
|-----------------------------------|---------------------------|--|
| vanadium pentoxide - 1314-62-1 | Carcinogen | |
| Beryllium Oxyacetate - 19049-40-2 | Carcinogen | |
| Lead - 7439-92-1 | Carcinogen | |
| | Developmental | |
| | Female Reproductive | |
| | Male Reproductive | |
| Nickel - 7440-02-0 | Carcinogen | |
| Cadmium - 7440-43-9 | Carcinogen | |
| | Developmental | |
| | Male Reproductive | |
| Cobalt - 7440-48-4 | Carcinogen | |

U.S. State Right-to-Know Regulations

| Chemical name | New Jersey | Massachusetts | Pennsylvania |
|---------------|------------|---------------|--------------|
| Water | - | - | X |
| 7732-18-5 | | | |

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| Nitric Acid 7697-37-2 | Х | X | X |
|--|---|---|---|
| Selenium 7782-49-2 | Х | X | Х |
| Aluminium nitrate nonahydrate 7784-27-2 | Х | - | Х |
| Chromium (III) nitrate nonahydrate 7789-02-8 | X | - | Х |
| Barium nitrate 10022-31-8 | X | X | Х |
| vanadium pentoxide 1314-62-1 | Х | Х | Х |
| uranyl nitrate, hexahydrate 13520-83-7 | Х | X | Х |
| Thorium (IV) nitrate 13823-29-5 | Х | X | Х |
| Manganese(II) nitrate hexahydrate 17141-63-8 | Х | - | Х |
| Beryllium Oxyacetate 19049-40-2 | Х | - | Х |
| Lead 7439-92-1 | Х | X | Х |
| Nickel 7440-02-0 | Х | Х | Х |
| Silver 7440-22-4 | Х | X | Х |
| Thallium 7440-28-0 | Х | X | Х |
| Arsenic 7440-38-2 | Х | X | X |
| Cadmium 7440-43-9 | Х | X | X |
| Cobalt 7440-48-4 | Х | Х | Х |
| Copper 7440-50-8 | Х | X | X |
| Zinc 7440-66-6 | Х | X | X |

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

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16. Other information

NFPA Health hazards 3 Flammability 1 Instability 0 Special hazards -Health hazards 3 HMIS Flammability 1 Physical hazards 0 Personal protection X

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: Exposure controls/personal protection

TWA (time-weighted average) STEL (Short Term Exposure Limit) TWA STEL

Ceiling Maximum limit value Skin designation Sk*

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)

U.S. Environmental Protection Agency ChemView Database

European Food Safety Authority (EFSA) EPA (Environmental Protection Agency)

Acute Exposure Guideline Level(s) (AEGL(s))

U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act

U.S. Environmental Protection Agency High Production Volume Chemicals

Food Research Journal

Hazardous Substance Database

International Uniform Chemical Information Database (IUCLID)

Japan GHS Classification

Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)

NIOSH (National Institute for Occupational Safety and Health)

National Library of Medicine's ChemID Plus (NLM CIP)

National Library of Medicine's PubMed database (NLM PUBMED)

National Toxicology Program (NTP)

New Zealand's Chemical Classification and Information Database (CCID)

Organization for Economic Co-operation and Development Environment, Health, and Safety Publications

Organization for Economic Co-operation and Development High Production Volume Chemicals Program

Organization for Economic Co-operation and Development Screening Information Data Set

World Health Organization

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Revision Note No information available.

Disclaimer

The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

End of Safety Data Sheet

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