



# SAFETY DATA SHEET

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

Revision date 16-Apr-2024

Revision Number 2.01

## 1. Identification

### Product identifier

**Product Name** ICH/USP 232 Class1&2 Parenteral Elements

### Other means of identification

**Product Code(s)** 5191-4533

**Synonyms** None

### Recommended use of the chemical and restrictions on use

**Recommended use** Reagents and Standards for Analytical Chemical Laboratory Use

### Restrictions on use

### 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 2 |
| Corrosive to metals               | Category 1 |

**Hazards not otherwise classified (HNOC)**  
Not applicable

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### Label elements

#### **Warning**

#### **Hazard statements**

Classified according to OSHA.

Causes skin irritation

Causes serious eye irritation

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

If eye irritation persists: Get medical advice/attention

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

No information available.

## **3. Composition/information on ingredients**

### **Substance**

Not applicable.

### **Mixture**



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Chemical nature aqueous solution.

| Chemical name | CAS No.   | Weight-% | Trade secret |
|---------------|-----------|----------|--------------|
| Nitric Acid   | 7697-37-2 | 1 - <3   | *            |

## 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.                                                                                                                                                                                                                            |
| 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 medical attention if irritation develops and persists. |
| Skin contact                       | Wash 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 | May cause redness and tearing of the eyes. Burning sensation. |
|----------|---------------------------------------------------------------|

### Indication of any immediate medical attention and special treatment needed

|                    |                        |
|--------------------|------------------------|
| Note to physicians | Treat symptomatically. |
|--------------------|------------------------|

## 5. Fire-fighting measures

|                              |                                                                                                         |
|------------------------------|---------------------------------------------------------------------------------------------------------|
| Suitable Extinguishing Media | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Large Fire                   | CAUTION: Use of water spray when fighting fire may be inefficient.                                      |



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|                                                                       |                                                                                                                                    |
|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| <b>Unsuitable extinguishing media</b>                                 | Do not scatter spilled material with high pressure water streams.                                                                  |
| <b>Specific hazards arising from the chemical</b>                     | No information available.                                                                                                          |
| <b>Explosion data</b>                                                 |                                                                                                                                    |
| <b>Sensitivity to mechanical impact</b>                               | None.                                                                                                                              |
| <b>Sensitivity to static discharge</b>                                | None.                                                                                                                              |
| <b>Special protective equipment and precautions for fire-fighters</b> | 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

|                             |                                                                                                                        |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------|
| <b>Personal precautions</b> | Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. |
| <b>Other information</b>    | Refer to protective measures listed in Sections 7 and 8.                                                               |

#### Methods and material for containment and cleaning up

|                                |                                                       |
|--------------------------------|-------------------------------------------------------|
| <b>Methods for containment</b> | Prevent further leakage or spillage if safe to do so. |
| <b>Methods for cleaning up</b> | Pick up and transfer to properly labeled containers.  |

### 7. Handling and storage

#### Precautions for safe handling

|                                |                                                                                                                                                                                                                             |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Advice on safe handling</b> | 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

|                           |                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Storage Conditions</b> | 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. |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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## 8. Exposure controls/personal protection

### Control parameters

#### Exposure Limits

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

#### 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). If splashes are likely to occur, wear safety glasses with side-shields.

**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.

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

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

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## 9. Physical and chemical properties

### Information on basic physical and chemical properties

|                |                          |
|----------------|--------------------------|
| Physical state | Liquid                   |
| Appearance     | Liquid                   |
| Color          | colorless                |
| Odor           | Odorless                 |
| Odor threshold | No information available |

| <u>Property</u>                         | <u>Values</u>          | <u>Remarks • Method</u> |
|-----------------------------------------|------------------------|-------------------------|
| pH                                      | No data available      | None known              |
| Melting point / freezing point          | 0 °C / 32 °F           | None known              |
| Initial boiling point and boiling range | 100 °C / 212 °F        | None known              |
| Flash point                             | No data available      | None known              |
| Evaporation rate                        | No data available      | None known              |
| Flammability                            | No data available      | None known              |
| Flammability Limit in Air               |                        | None known              |
| Upper flammability or explosive limits  | No data available      |                         |
| Lower flammability or explosive limits  | No data available      |                         |
| Vapor pressure                          | 23 hPa                 | @ 20°C                  |
| Relative vapor density                  | No data available      | None known              |
| Relative density                        | 0.99821 g/cm3 at 20 °C | 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                | No data available      | None known              |
| Decomposition temperature               | 100 °C / 212 °F        | None known              |
| Kinematic viscosity                     | No data available      | None known              |
| Dynamic viscosity                       | No data available      | None known              |

### Other information

|                      |                          |
|----------------------|--------------------------|
| Explosive properties | No information available |
| Oxidizing properties | No information available |
| Softening point      | No information available |
| Molecular weight     | No information available |
| VOC content          | No information available |
| Liquid Density       | No information available |
| Bulk density         | No information available |

## 10. Stability and reactivity

|                    |                                 |
|--------------------|---------------------------------|
| Reactivity         | No information available.       |
| Chemical stability | Stable under normal conditions. |



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**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 irritation. (based on components). May cause redness, itching, and pain.

**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. 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  
ATEmix (inhalation-gas) 99,999.00 ppm  
ATEmix (inhalation-dust/mist) 99,999.00 mg/l  
ATEmix (inhalation-vapor) 139.50 mg/l

#### Component Information

| Chemical name | Oral LD50 | Dermal LD50 | Inhalation LC50        |
|---------------|-----------|-------------|------------------------|
| Nitric Acid   | -         | -           | = 2500 ppm ( Rat ) 1 h |



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|           |  |  |                           |
|-----------|--|--|---------------------------|
| 7697-37-2 |  |  | ATE (vapours) = 2.65 mg/L |
|-----------|--|--|---------------------------|

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

|                                          |                                                                                          |
|------------------------------------------|------------------------------------------------------------------------------------------|
| <b>Skin corrosion/irritation</b>         | Classification based on data available for ingredients. Causes skin irritation.          |
| <b>Serious eye damage/eye irritation</b> | Classification based on data available for ingredients. Causes serious eye irritation.   |
| <b>Respiratory or skin sensitization</b> | No information available.                                                                |
| <b>Germ cell mutagenicity</b>            | No information available.                                                                |
| <b>Carcinogenicity</b>                   | The table below indicates whether each agency has listed any ingredient as a carcinogen. |
| <b>Reproductive toxicity</b>             | No information available.                                                                |
| <b>STOT - single exposure</b>            | No information available.                                                                |
| <b>STOT - repeated exposure</b>          | No information available.                                                                |
| <b>Aspiration hazard</b>                 | No information available.                                                                |
| <b>Other adverse effects</b>             | No information available.                                                                |
| <b>Interactive effects</b>               | No information available.                                                                |

## 12. Ecological information

### Ecotoxicity

**Persistence and degradability** No information available.

**Bioaccumulation** There is no data for this product.





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## Component Information

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

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  
Special Provisions IB3, T7, TP1, TP28  
DOT Marine Pollutant NP  
Description UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III  
Emergency Response Guide Number 154

### 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



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**UN proper shipping name** Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid)  
**Transport hazard class(es)** 8  
**Packing group** III  
**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 name** Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid)  
**Transport hazard class(es)** 8  
**Packing group** III  
**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 name** Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid)  
**Transport hazard class(es)** 8  
**Packing group** III  
**EmS-No.** F-A, S-B  
**Special Provisions** 223, 274  
**Marine pollutant** NP  
**Description** UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III

## 15. Regulatory information

### International Inventories

#### TSCA

LGC, to the best of its ability, has confirmed that the chemical substances in this product are listed as "Active" in the EPA (Environmental Protection Agency) "TSCA Inventory Notification (Active-Inactive) Requirements Rule" ("the Final Rule") of Feb 2019, as amended Feb 2021."

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

DSL/NDSL  
EINECS/ELINCS  
ENCS

Contact supplier for inventory compliance status.  
Contact supplier for inventory compliance status.  
Contact supplier for inventory compliance status.



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**IECSC** Contact supplier for inventory compliance status.  
**KECL** Contact supplier for inventory compliance status.  
**PICCS** Contact supplier for inventory compliance status.  
**AIIC** Contact supplier for inventory compliance status.

## Legend:

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**DSL/NDL** - 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                           |

### 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<br>7697-37-2 | 1000 lb                     | -                      | -                         | X                          |

### 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<br>7697-37-2 | 1000 lb                  | 1000 lb                            | RQ 1000 lb final RQ<br>RQ 454 kg final RQ |

## US State Regulations



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### California Proposition 65

This product contains the following Proposition 65 chemicals:.

| Chemical name                  | California Proposition 65                                               |
|--------------------------------|-------------------------------------------------------------------------|
| Nickel - 7440-02-0             | Carcinogen                                                              |
| vanadium pentoxide - 1314-62-1 | Carcinogen                                                              |
| Lead - 7439-92-1               | Carcinogen<br>Developmental<br>Female Reproductive<br>Male Reproductive |
| Cobalt - 7440-48-4             | Carcinogen                                                              |
| Mercury - 7439-97-6            | Developmental                                                           |
| Cadmium - 7440-43-9            | Carcinogen<br>Developmental<br>Male Reproductive                        |

### U.S. State Right-to-Know Regulations

| Chemical name                   | New Jersey | Massachusetts | Pennsylvania |
|---------------------------------|------------|---------------|--------------|
| Water<br>7732-18-5              | -          | -             | X            |
| Nitric Acid<br>7697-37-2        | X          | X             | X            |
| Nickel<br>7440-02-0             | X          | X             | X            |
| Arsenic<br>7440-38-2            | X          | X             | X            |
| vanadium pentoxide<br>1314-62-1 | X          | X             | X            |
| Lead<br>7439-92-1               | X          | X             | X            |
| Cobalt<br>7440-48-4             | X          | X             | X            |
| Mercury<br>7439-97-6            | X          | X             | X            |
| Cadmium<br>7440-43-9            | X          | X             | X            |

### U.S. EPA Label Information

**EPA Pesticide Registration Number** Not applicable

## 16. Other information



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|             |                         |                       |                           |                              |
|-------------|-------------------------|-----------------------|---------------------------|------------------------------|
| <b>NFPA</b> | <b>Health hazards</b> 3 | <b>Flammability</b> 0 | <b>Instability</b> 0      | <b>Special hazards</b> -     |
| <b>HMIS</b> | <b>Health hazards</b> 3 | <b>Flammability</b> 0 | <b>Physical hazards</b> 0 | <b>Personal protection</b> X |

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

### **Legend Section 8: Exposure controls/personal protection**

|         |                             |      |                                  |
|---------|-----------------------------|------|----------------------------------|
| TWA     | TWA (time-weighted average) | STEL | STEL (Short Term Exposure Limit) |
| Ceiling | Maximum limit value         | Sk*  | Skin designation                 |

### **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

**Revision date** 16-Apr-2024

**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**