1 Identification

- **Product identifier**
  - **Product name:** Sulfur Standard: 1000 µg/mL S in H2O [100ml bottle]
  - **Part number:** 5190-8529
  - **Application of the substance / the mixture** Reference material for laboratory use only
  - **Manufacturer/Supplier:** Agilent Technologies, Inc.
    5301 Stevens Creek Blvd.
    Santa Clara, CA 95051 USA
  - **Information department:** e-mail: pdl-msds_author@agilent.com
  - **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

2 Hazard(s) identification

- **Classification of the substance or mixture**
  The product is not classified according to the Globally Harmonized System (GHS).

- **Label elements**
  - **GHS label elements** Not applicable
  - **Hazard pictograms** Not applicable
  - **Signal word** Not applicable
  - **Hazard statements** Not applicable
  - **Classification system:**
    - **NFPA ratings (scale 0 - 4)**
      - Health = 0
      - Fire = 0
      - Reactivity = 0
    - **HMIS-ratings (scale 0 - 4)**
      - Health = 0
      - Fire = 0
      - Reactivity = 0
  - **Other hazards**
    - **Results of PBT and vPvB assessment**
      - **PBT:** Not applicable.
      - **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:**
  - Aqueous solution.
  - This product is not hazardous but contains hazardous components.
- **Dangerous components:** Not applicable

4 First-aid measures

- **Description of first aid measures**
  - **After inhalation:** Supply fresh air; consult doctor in case of complaints.
  - **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
  - **After eye contact:** Rinse opened eye for several minutes under running water.
  - **After swallowing:** Rinse mouth. Do not induce vomiting.

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5 Fire-fighting measures

- Extinguishing media
  - Suitable extinguishing agents: CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
  - Special hazards arising from the substance or mixture
    Formation of toxic gases is possible during heating or in case of fire.
- Advice for firefighters
  - Protective equipment: Wear self-contained respiratory protective device.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures Wear protective clothing.
- Environmental precautions: Dilute with plenty of water.
- Methods and material for containment and cleaning up:
  - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- 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 Store in cool, dry place in tightly closed receptacles.
  - Information about protection against explosions and fires: No special measures required.
- Conditions for safe storage, including any incompatibilities
  - Storage:
  - Requirements to be met by storerooms and receptacles:
    Store in a cool location.
    Please refer to the manufacturers certificate for specific storage and transport temperature conditions.
    Store only in the original receptacle.
    Keep container in a well-ventilated place. Keep away from sources of ignition and heat.
  - Information about storage in one common storage facility: Store away from foodstuffs.
  - Further information about storage conditions: None.
- Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.
- Control parameters
  - Components with limit values that require monitoring at the workplace:
    The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
  - Additional information: The lists that were valid during the creation were used as basis.
Product name: Sulfur Standard: 1000 µg/mL S in H2O [100ml bottle]

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- **Exposure controls**
- **Personal protective equipment:**
  - **General protective and hygienic measures:**
    The usual precautionary measures for handling chemicals should be followed.
  - **Breathing equipment:** Not required.
  - **Protection of hands:**
    Chemical-resistant, impervious gloves with an approved standards should be worn at all times.
    The selection of the glove material is based on the penetration times, rates of diffusion and its degradation.

  ![Protective gloves](Image)

- **Material of gloves**
  - PVC gloves
  - Neoprene gloves

- **Penetration time of glove material**
  The protection time of the gloves can not be accurately estimated for mixtures consisting of several substances.
  Refer to and observe manufacturers break through times of the protective gloves.

- **Eye protection:** Safety glasses

### 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**

  - **Appearance:**
    - Form: Liquid
    - Color: Colorless
  - **Odor:** Odorless
  - **Odour threshold:** Not determined.

  - **pH-value:** Not determined.

- **Change in condition**
  - **Melting point/Melting range:** Not determined.
  - **Boiling point/Boiling range:** 100 °C (212 °F)

- **Flash point:** Not applicable.

- **Flammability (solid, gaseous):** Not determined.

- **Ignition temperature:**
  - **Decomposition temperature:** Not determined.
  - **Auto igniting:** Product is not selfigniting.
  - **Danger of explosion:** Not determined.

- **Explosion limits:**
  - **Lower:** Not determined.
  - **Upper:** Not determined.

- **Vapor pressure at 20 °C (68 °F):** 23 hPa (17 mm Hg)

- **Density at 20 °C (68 °F):** 1 g/cm³ (8.345 lbs/gal)
- **Relative density** Not determined.
- **Vapour density** Not determined.
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- **Evaporation rate**: Not determined.
- **Solubility in / Miscibility with Water**: Fully miscible.
- **Partition coefficient (n-octanol/water)**: Not determined.
- **Viscosity**:
  - Dynamic: Not determined.
  - Kinematic: Not determined.
- **Other information**: No further relevant information available.

**10 Stability and reactivity**

- **Reactivity**: Stable under normal conditions.
- **Chemical stability**: Stable under normal conditions.
- **Thermal decomposition / conditions to be avoided**: Formation of toxic gases is possible during heating or in case of fire.
- **Possibility of hazardous reactions**: No dangerous reactions known.
- **Conditions to avoid**: Heat.
- **Incompatible materials**: Strong oxidizing agents.
- **Hazardous decomposition products**: Formation of toxic gases is possible during heating or in case of fire.

**11 Toxicological information**

- **Information on toxicological effects**
  - **Acute toxicity**:
    - **on the skin**: No irritant effect.
    - **on the eye**: No irritating effect.
  - **Sensitization**: No sensitizing effects known.
  - **Additional toxicological information**:
    - The product is not subject to classification according to internally approved calculation methods for preparations:
      When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
  - **Carcinogenic categories**
    - **IARC (International Agency for Research on Cancer)**: None of the ingredients is listed.
    - **NTP (National Toxicology Program)**: None of the ingredients is listed.
    - **OSHA-Ca (Occupational Safety & Health Administration)**: None of the ingredients is listed.

**12 Ecological information**

- **Toxicity**
  - **Aquatic 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.
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- Mobility in soil: No further relevant information available.
- Additional ecological information:
  - General notes: Generally not hazardous for water
  - 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: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- Uncleaned packagings:
  - Recommendation: Dispose in accordance with national regulations.
  - Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

- UN-Number
  - DOT, ADR, ADN, IMDG, IATA: Not applicable
  - DOT, ADR, ADN, IMDG, IATA: Not applicable
- Transport hazard class(es)
  - DOT, ADR, ADN, IMDG, IATA: Not applicable
  - Class: Not applicable
- Packing group
  - DOT, ADR, IMDG, IATA: Not applicable
- Environmental hazards:
  - Marine pollutant: No
- Special precautions for user: Not applicable.
- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable.
- Transport/Additional information: Not dangerous according to the above specifications.
- UN "Model Regulation": -

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Sara
- Section 355 (extremely hazardous substances):
  None of the ingredients is listed.
- Section 313 (Specific toxic chemical listings):
  None of the ingredients is listed.
- TSCA (Toxic Substances Control Act):
  All ingredients are listed.
Product name: Sulfur Standard: 1000 µg/mL S in H2O [100ml bottle]

- **Proposition 65**
  - **Chemicals known to cause cancer:**
    None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for females:**
  None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for males:**
  None of the ingredients is listed.

- **Chemicals known to cause developmental toxicity:**
  None of the ingredients is listed.

- **Carcinogenic categories**
  - **EPA (Environmental Protection Agency)**
    None of the ingredients is listed.

- **TLV (Threshold Limit Value established by ACGIH)**
  None of the ingredients is listed.

- **NIOSH-Ca (National Institute for Occupational Safety and Health)**
  None of the ingredients is listed.

- **GHS label elements** Not applicable
  - **Hazard pictograms** Not applicable
  - **Signal word** Not applicable
  - **Hazard statements** Not applicable

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

### 16 Other information

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.

- **Date of preparation / last revision** 06/04/2015 / -
- **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)
  - IMDG: International Maritime Code for Dangerous Goods
  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - ACGIH: American Conference of Governmental Industrial Hygienists
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - ELINCS: European List of Notified Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - NFPA: National Fire Protection Association (USA)
  - HMIS: Hazardous Materials Identification System (USA)
- **Sources**