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| <b>Selenium Standard Solution</b>                                                                      |                                                                                                                             |                                                                         |

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking**
**1.1 Product Identifiers**

Product name : Selenium Standard Solution  
Product number : R-300-20STSE-01, R-100-51STSE-01, R-100-51STSE-500, R-100-51STSE-250  
Substance name : Selenium IV (Se) Standard, 20ppm, 1ppm, 500ppb, and 250ppb  
REACH reg no. : This product is exempt from registration, insufficient annual volume.

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses : Reagent for analysis

**1.3 Details of the supplier of the safety data sheet**

Company : Modern Water Monitoring Limited  
: Units 15-17 Cambridge Science Park  
: Cambridge, CB4 0FQ  
: UK  
Email : [info@modernwater.co.uk](mailto:info@modernwater.co.uk)

**1.4 Emergency telephone number**

+44 (0) 1483 696030

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**SECTION 2: Hazards identification**
**2.1 Classification of the substance or mixture**

**Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]**

Skin irritation (Category 2)

Eye irritation (Category 2)

**2.2 Label elements**

Hazard pictogram



Signal Word: Warning


Hazard statements:

|      |                        |
|------|------------------------|
| H320 | Causes eye irritation  |
| H315 | Causes skin irritation |

Precautionary statements:

|                |                                                                                                                                  |
|----------------|----------------------------------------------------------------------------------------------------------------------------------|
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
|----------------|----------------------------------------------------------------------------------------------------------------------------------|

**2.3 Other hazards : Not known**

|                                                                                                        |                                                                                  |                             |
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### SECTION 3: Composition/information on ingredients

**3.1 Substance** : Not relevant, see 3.2 Mixtures

#### 3.2 Mixtures

Hazardous ingredients classification according to Regulation (EC) No. 1272/2008 CLP

| Substance name                                                            | Concentration | CAS No    | EC No     |
|---------------------------------------------------------------------------|---------------|-----------|-----------|
| Nitric acid                                                               | 2-3%          | 7697-37-2 | 231-714-2 |
| H315 – causes skin irritation                                             |               |           |           |
| H319 – causes serious eye irritation                                      |               |           |           |
| Selenious Acid                                                            | <0.01%        | 7783-00-8 | 231=974-7 |
| H301 – Toxic if swallowed                                                 |               |           |           |
| H331 – Toxic if inhaled                                                   |               |           |           |
| H373 - May cause damage to organs through prolonged or repeated exposure. |               |           |           |
| H400 - Very toxic to aquatic life.                                        |               |           |           |
| H410 – very toxic to aquatic life with long lasting effects               |               |           |           |
| M-Factor - Aquatic Acute: 10                                              |               |           |           |

### SECTION 4: First Aid measures

#### 4.1 Description of first aid measure

**General advice:** When in doubt or if symptoms observed, get medical advice. Show this safety data sheet to the doctor in attendance.

**After Inhalation:** Remove casualty to fresh air and keep warm. If breathing difficult or respiratory tract irritation get medical assistance. If not breathing, give artificial respiration and get urgent medical assistance.

**In case of skin contact:** Remove contaminated clothing. Wash off with soap and plenty of water. Get medical assistance.

**After eye contact:** Rinse thoroughly with plenty of water for at least 15 minutes. Remove contact lenses. Get urgent medical assistance.


**In case of ingestion:** If accidentally swallowed rinse mouth with plenty of water (only if person is conscious). Do not induce vomiting. Get medical attention.

#### 4.2 Most important symptoms and effects, both acute and delayed

No information available.

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

No information available.

|                                                                                                        |                                                                                                                                                       |                                                                                  |
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**SECTION 5: Fire-fighting measures.**

- 5.1 Extinguishing media:**  
**Suitable extinguishing media**  
 Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.  
**Unsuitable extinguishing media**  
 No restriction
- 5.2 Special hazards arising from the substance or mixture**  
 Possible generation of Nitrogen oxide (NO<sub>x</sub>) fumes
- 5.3 Advice for firefighters**  
 Wear self-contained breathing apparatus.
- 5.4 Additional information**  
 Do not let run-off from fire-fighting to enter drains or water courses.

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**SECTION 6: Accidental release measures.**

- 6.1 Personal precautions, protective equipment and emergency procedures**  
 Use personal protective equipment (see section 8). Avoid breathing vapours, mist or gas. Ensure adequate ventilation.
- 6.2 Environmental precautions**  
 Do not let product enter drains or surface water. Spills are to be contained. Discharge into environment must be avoided.
- 6.3 Methods and materials for containment and cleaning up**  
 Soak up with inert absorbent material. Keep in a suitable closed container for disposal. Dispose correctly, referring to local regulations.
- 6.4 References to other sections**  
 For disposal see section 13.

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**SECTION 7: Handling and storage.**

- 7.1 Precautions for safe handling**  
 Avoid exposure to skin and eyes.
- 7.2 Conditions for safe storage, including and incompatibilities**  
 Store in a cool place, below 25°C. Keep contained upright and the cap tightly closed.
- 7.3 Specific end use(s)**  
 Apart from uses specified in section 1.2, no other specific uses.

|                                                                                                        |                                                                                  |                             |
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## SECTION 8: Exposure controls/personal protection.

### 8.1 Control parameters

Components with workplace control parameters

| Component      | CAS-No    | Value type                                                                                                                 | Limit value     |                    |
|----------------|-----------|----------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------|
| Nitric acid    | 7697-37-2 | STEL                                                                                                                       | 1ppm (2.6mg/m3) | EU and UK EH40 WEL |
| Selenious acid | 7783-00-8 | TWA                                                                                                                        | 0.1mg/m3        | EU and UK EH WEL   |
|                |           | . Where no specific short-term (STEL) exposure limit is listed, a figure three times the long-term exposure should be used |                 |                    |

### 8.2 Exposure controls:

#### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at end of workday.

#### Personal protective equipment

Wear suitable protective clothing

##### Eye/face protection

Safety glasses with side-shields conforming to EN166 or equivalent standard.

##### Skin protection

Handle with gloves (PVC or nitrile)

## SECTION 9: Physical and chemical properties.

### 9.1 Information on basic physical and chemical properties

|                                       |                         |
|---------------------------------------|-------------------------|
| Appearance                            | Clear colourless Liquid |
| Odour                                 | none                    |
| Odour threshold                       | no data available       |
| pH                                    | 1 (approx.)             |
| Melting point/range (°C)              | no data available       |
| Boiling point (°C):                   | 100 (approx.)           |
| Flash point                           | not flammable           |
| Evaporation rate                      | no data available       |
| Flammability (solid/gas)              | not applicable          |
| Upper/lower flammability rates        | not flammable           |
| Vapour pressure (mmHg at 20°C)        | 25 (approx.)            |
| Vapour density                        | no data available       |
| Relative density                      | 1.0 (approx.)           |
| Water solubility                      | completely miscible     |
| Partition coefficient: n-octane/water | no data available       |
| Auto ignition temperature             | no data available       |
| Decomposition temperature             | no data available       |
| Viscosity                             | no data available       |



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Explosive properties not applicable  
Oxidising properties no data available

### 9.2 Other data

Corrosion May be corrosive to metals

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## SECTION 10: Stability and reactivity.

### 10.1 Reactivity

Mildly reactive to bases.

### 10.2 Chemical stability

This product is chemically stable under standard ambient conditions (room temperature).

### 10.3 Possibility of hazardous reactions

No data available.

### 10.4 Conditions to avoid

No data available.

### 10.5 Incompatible materials

Strong bases.

### 10.6 Hazardous decomposition products

No data available

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## SECTION 11: Toxicological information.

### 11.1 Information on toxicological effects

#### Acute toxicity

No data available

#### Skin corrosion/irritation

Causes skin irritation.

#### Serious eye damage/eye irritation

Causes eye irritation

#### Respiration or skin sensitisation

Not sensitising

#### Germ cell mutagenicity

No data available

#### Carcinogenicity

No indication of human carcinogenicity

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### **Reproductive toxicity**

No data available

### **Specific target organ exposure – single exposure**

No data available

### **Specific target organ exposure – repeated exposure**

No data available

### **Aspiration hazard**

Not applicable

### **Other adverse effects**

No data available

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## **SECTION 12: Ecological information.**

### **12.1 Toxicity**

No data available

### **12.2 Persistence and degradability**

No data available

### **12.3 Bioaccumulative potential**

No data available

### **12.4 Mobility in soil**

No data available

### **12.5 Results of PBT and vPvB assessment**

This mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### **12.6 Other adverse effects**

Harmful to aquatic life with long lasting effects

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## **SECTION 13: Disposal considerations.**

### **13.1 Waste treatment methods:**

#### **Product**

Dispose in accordance to local regulations, consult the local waste disposal expert.

#### **Contaminated packaging**

Dispose in accordance to local regulations, the same way as the product itself.

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**SECTION 14: Transport information.**

Non – Hazardous for air, road and sea transport.

**Land transport (ADR/RID)**

|      |                             |                |
|------|-----------------------------|----------------|
| 14.1 | UN number                   | Not applicable |
| 14.2 | UN proper shipping name     | Not applicable |
| 14.3 | Transport hazard            | Not applicable |
| 14.4 | Packaging group             | Not applicable |
| 14.5 | Environmental hazards       | Not applicable |
| 14.6 | Special precaution for user | Not applicable |

**Air transport (IATA)**

|      |                             |                |
|------|-----------------------------|----------------|
| 14.1 | UN number                   | Not applicable |
| 14.2 | UN proper shipping name     | Not applicable |
| 14.3 | Transport hazard            | Not applicable |
| 14.4 | Packaging group             | Not applicable |
| 14.5 | Environmental hazards       | Not applicable |
| 14.6 | Special precaution for user | Not applicable |

**SEA transport (IMDG)**

|      |                             |                |
|------|-----------------------------|----------------|
| 14.1 | UN number                   | Not applicable |
| 14.2 | UN proper shipping name     | Not applicable |
| 14.3 | Transport hazard            | Not applicable |
| 14.4 | Packaging group             | Not applicable |
| 14.5 | Environmental hazards       | Not applicable |
| 14.6 | Special precaution for user | Not applicable |

**SECTION 15: Regulatory information.**


**15.1 Safety, health and environmental regulation/legislation specific for the substance or mixture**

None applicable

**15.2 Chemical Safety Assessment**

No data available

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**SECTION 6: Other information.****Abbreviations and acronyms**

ADR – European Agreement Concerning the International Carriage of Dangerous Goods by Road

IATA – International Air Transportation Association

IMDG – international Maritime Code of Dangerous Goods

Se - Selenium

STEL – Short term exposure limit

TWA – Time Weighted Average

WEL – Workplace Exposure Limit

**Symbol, R and S phrases for this mixture**

|              |              |                                                                                              |
|--------------|--------------|----------------------------------------------------------------------------------------------|
| Symbol       | Xi- Irritant |                                                                                              |
| R-phrases(s) | R36/38       | Irritating to eyes and skin                                                                  |
| S-phrases(s) | S26          | In case of contact with eyes, rinse immediately with plenty of water and seek medical advice |

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