

**MANGANESE AAS STANDARD SOLUTION  
1000MG/L MN IN DILUTED HCL TRACEABLE  
TO NIST MSDS**

**CAS-No.: MSDS**



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**MATERIAL SAFETY DATA SHEET (MSDS)**

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

**1.1. Product identifier**

Product form : Mixture  
:  
Product code : A250H

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

**1.2.1. Relevant identified uses**

Industrial/Professional use spec : Industrial  
For professional use only

**1.2.2. Uses advised against**

No additional information available

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

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**SECTION 2: Hazards identification**

**2.1. Classification of the substance or mixture**

**Classification according to Regulation (EC) No. 1272/2008 [CLP]**

Corrosive to metals, H290  
Category 1  
Skin corrosion/irritation, H315  
Category 2  
Serious eye damage/eye H319  
irritation, Category 2

Full text of H statements : see section 16

**Adverse physicochemical, human health and environmental effects**

No additional information available

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### 2.2. Label elements

#### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS05

Signal word (CLP) :

Warning

Hazard statements (CLP) :

H290 - May be corrosive to metals.  
H315 - Causes skin irritation.  
H319 - Causes serious eye irritation.

Precautionary statements (CLP) :

P302+P352 - IF ON SKIN: Wash with plenty of water/...  
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

No additional information available

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

| Name   | Product identifier   | %        | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|--|--|----------|---|
| Water  | (CAS-No.) 7732-18-5<br>(EC-No.) 231-791-2                                | 95 - 99  | Not classified  |
| Hydrochloric acid                                  | (CAS-No.) 7647-01-0<br>(EC-No.) 231-595-7<br>(EC Index-No.) 017-002-01-X | >= 2     | Skin Corr. 1B, H314<br>STOT SE 3, H335                          |
| MANGANESE (II) CHLORIDE PURIFIED (TETRAHYDRATE) 97 | (CAS-No.) 13446-34-9   | 0.01 - 1 | Acute Tox. 4 (Oral), H302                                       |

Full text of H-statements: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures after inhalation :

Allow affected person to breathe fresh air. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

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|                                       |  |
|---------------------------------------|--|
| First-aid measures after skin contact | : Wash with plenty of water/.... Wash contaminated clothing before reuse. Get medical advice/attention.  |
| First-aid measures after eye contact  | : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention. |
| First-aid measures after ingestion    | : Rinse mouth. Do not induce vomiting. Get medical advice/attention.   |

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

|                                     |                                  |
|-------------------------------------|----------------------------------|
| Symptoms/effects after skin contact | : Causes skin irritation.        |
| Symptoms/effects after eye contact  | : Causes serious eye irritation. |

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

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

|                                |  |
|--------------------------------|--|
| Suitable extinguishing media   | : Carbon dioxide. Dry powder. Foam. Water spray.   |
| Unsuitable extinguishing media | : Do not use extinguishing media containing water. |

### 5.2. Special hazards arising from the substance or mixture

No additional information available

### 5.3. Advice for firefighters

|                                |   |
|--------------------------------|---|
| Protection during firefighting | : Do not enter fire area without proper protective equipment, including respiratory protection. |
|--------------------------------|---|

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

|                      |                                   |
|----------------------|-----------------------------------|
| Emergency procedures | : Evacuate unnecessary personnel. |
|----------------------|-----------------------------------|

#### 6.1.2. For emergency responders

|                      |  |
|----------------------|--|
| Protective equipment | : Use personal protective equipment as required. |
| Emergency procedures | : Stop release.                                  |

### 6.2. Environmental precautions

Avoid release to the environment.

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

|                         |  |
|-------------------------|--|
| Methods for cleaning up | : On land, sweep or shovel into suitable containers. |
|-------------------------|--|

### 6.4. Reference to other sections

No additional information available

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

|                               |   |
|-------------------------------|---|
| Precautions for safe handling | : Avoid contact with skin and eyes. Do not breathe vapours.   |
| Hygiene measures              | : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. |

### 7.2. Conditions for safe storage, including any incompatibilities

|                    |  |
|--------------------|--|
| Storage conditions | : Store in a well-ventilated place. Keep container tightly closed. |
|--------------------|--|

### 7.3. Specific end use(s)

No additional information available

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### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

No additional information available

#### 8.2. Exposure controls

|                          |                                      |
|--------------------------|--------------------------------------|
| Hand protection          | : Protective gloves                  |
| Eye protection           | : Chemical goggles or safety glasses |
| Skin and body protection | : Wear suitable protective clothing  |
| Respiratory protection   | : Wear respiratory protection.       |

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

|  |                     |
|--|---------------------|
| Physical state                             | : Liquid            |
| Colour                                     | : Clear Colorless.  |
| Odour                                      | : No data available |
| Odour threshold                            | : No data available |
| pH   | : No data available |
| Relative evaporation rate (butylacetate=1) | : No data available |
| Melting point                              | : No data available |
| Freezing point                             | : No data available |
| Boiling point                              | : No data available |
| Flash point                                | : No data available |
| Auto-ignition temperature                  | : No data available |
| Decomposition temperature                  | : No data available |
| Flammability (solid, gas)                  | : No data available |
| Vapour pressure                            | : No data available |
| Relative vapour density at 20 °C           | : No data available |
| Relative density                           | : No data available |
| Solubility                                 | : No data available |
| Log Pow                                    | : No data available |
| Viscosity, kinematic                       | : No data available |
| Viscosity, dynamic                         | : No data available |
| Explosive properties                       | : No data available |

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Oxidising properties : No data available

Explosive limits : No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No additional information available

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No additional information available

### 10.4. Conditions to avoid

Direct sunlight. Overheating. Open flame. Heat. Sparks.

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

No additional information available

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

Skin corrosion/irritation : Causes skin irritation.

Serious eye damage/irritation : Causes serious eye irritation.

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

Aspiration hazard : Not classified

## SECTION 12: Ecological information

### 12.1. Toxicity

No additional information available

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### 12.2. Persistence and degradability

No additional information available

### 12.3. Bioaccumulative potential

No additional information available

### 12.4. Mobility in soil

No additional information available

### 12.5. Results of PBT and vPvB assessment

No additional information available

### 12.6. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

No additional information available

## SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

### 14.1. UN number

|               |        |
|---------------|--------|
| UN-No. (ADR)  | : 1789 |
| UN-No. (IMDG) | : 1789 |
| UN-No. (IATA) | : 1789 |
| UN-No. (ADN)  | : 1789 |
| UN-No. (RID)  | : 1789 |

### 14.2. UN proper shipping name

|                                       |   |
|---------------------------------------|---|
| Proper Shipping Name (ADR)            | : HYDROCHLORIC ACID                     |
| Proper Shipping Name (IMDG)           | : HYDROCHLORIC ACID                     |
| Proper Shipping Name (IATA)           | : Hydrochloric acid                     |
| Proper Shipping Name (ADN)            | : HYDROCHLORIC ACID                     |
| Proper Shipping Name (RID)            | : HYDROCHLORIC ACID                     |
| Transport document description (ADR)  | : UN 1789 HYDROCHLORIC ACID, 8, II, (E) |
| Transport document description (IMDG) | : UN 1789 HYDROCHLORIC ACID, 8, II      |
| Transport document description (IATA) | : UN 1789 Hydrochloric acid, 8, II      |
| Transport document description (ADN)  | : UN 1789 HYDROCHLORIC ACID, 8, II      |
| Transport document description (RID)  | : UN 1789 HYDROCHLORIC ACID, 8, II      |

### 14.3. Transport hazard class(es)

#### ADR

Transport hazard class(es) (ADR) : 8

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Danger labels (ADR) : 8



### IMDG

Transport hazard class(es) (IMDG) : 8

Danger labels (IMDG) : 8



### IATA

Transport hazard class(es) (IATA) : 8

Hazard labels (IATA) : 8



### ADN

Transport hazard class(es) (ADN) : 8

Danger labels (ADN) : 8



### RID

Transport hazard class(es) (RID) : 8

Danger labels (RID) : 8



## 14.4. Packing group

Packing group (ADR) : II

Packing group (IMDG) : II

Packing group (IATA) : II

Packing group (ADN) : II

Packing group (RID) : II

## 14.5. Environmental hazards

Dangerous for the environment : No

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Marine pollutant : No  
Other information : No supplementary information available

### 14.6. Special precautions for user

#### - Overland transport

Classification code (ADR) : C1  
Special provisions (ADR) : 520  
Limited quantities (ADR) : 1I  
Excepted quantities (ADR) : E2  
Packing instructions (ADR) : P001, IBC02  
Mixed packing provisions (ADR) : MP15  
Portable tank and bulk container instructions (ADR) : T8  
Portable tank and bulk container special provisions (ADR) : TP2  
Tank code (ADR) : L4BN  
Vehicle for tank carriage : AT  
Transport category (ADR) : 2  
Hazard identification number (Kemler No.) : 80  
Orange plates :



Tunnel restriction code (ADR) : E  
EAC code : 2R

#### - Transport by sea

Packing instructions (IMDG) : P001  
IBC packing instructions (IMDG) : IBC02  
IBC special provisions (IMDG) : B20  
Tank instructions (IMDG) : T8  
Tank special provisions (IMDG) : TP2  
EmS-No. (Fire) : F-A  
EmS-No. (Spillage) : S-B  
Stowage category (IMDG) : C  
Properties and observations (IMDG) : Colourless liquid. An aqueous solution of the gas hydrogen chloride. Highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.  
MFAG-No : 157

#### - Air transport

PCA Excepted quantities (IATA) : E2  
PCA Limited quantities (IATA) : Y840  
PCA limited quantity max net quantity (IATA) : 0.5L  
PCA packing instructions (IATA) : 851  
PCA max net quantity (IATA) : 1L  
CAO packing instructions (IATA) : 855  
CAO max net quantity (IATA) : 30L  
Special provisions (IATA) : A3  
ERG code (IATA) : 8L

#### - Inland waterway transport

Classification code (ADN) : C1



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|                                   |          |
|-----------------------------------|----------|
| Special provisions (ADN)          | : 520    |
| Limited quantities (ADN)          | : 1 L    |
| Excepted quantities (ADN)         | : E2     |
| Carriage permitted (ADN)          | : T      |
| Equipment required (ADN)          | : PP, EP |
| Number of blue cones/lights (ADN) | : 0      |

### - Rail transport

|   |               |
|---|---------------|
| Classification code (RID)                                 | : C1          |
| Special provisions (RID)                                  | : 520         |
| Limited quantities (RID)                                  | : 1L          |
| Excepted quantities (RID)                                 | : E2          |
| Packing instructions (RID)                                | : P001, IBC02 |
| Mixed packing provisions (RID)                            | : MP15        |
| Portable tank and bulk container instructions (RID)       | : T8          |
| Portable tank and bulk container special provisions (RID) | : TP2         |
| Tank codes for RID tanks (RID)                            | : L4BN        |
| Transport category (RID)                                  | : 2           |
| Colis express (express parcels) (RID)                     | : CE6         |
| Hazard identification number (RID)                        | : 80          |

### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

## SECTION 15: Regulatory information

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

#### 15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

#### 15.1.2. National regulations

##### Germany

Reference to AwSV : Water hazard class (WGK) 3, Highly hazardous to water (Classification according to AwSV, Annex 1)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

##### Netherlands

SZW-lijst van kankerverwekkende stoffen : None of the components are listed

SZW-lijst van mutagene stoffen : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : None of the components are listed

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NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : None of the components are listed

### Denmark

Recommendations Danish Regulation : Young people below the age of 18 years are not allowed to use the product

### 15.2. Chemical safety assessment

No additional information available

### SECTION 16: Other information

Full text of H- and EUH-statements:

|                     |  |
|---------------------|--|
| Acute Tox. 4 (Oral) | Acute toxicity (oral), Category 4  |
| Eye Irrit. 2        | Serious eye damage/eye irritation, Category 2  |
| Met. Corr. 1        | Corrosive to metals, Category 1  |
| Skin Corr. 1B       | Skin corrosion/irritation, Category 1B   |
| Skin Irrit. 2       | Skin corrosion/irritation, Category 2  |
| STOT SE 3           | Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation |
| H290                | May be corrosive to metals.  |
| H302                | Harmful if swallowed.  |
| H314                | Causes severe skin burns and eye damage.   |
| H315                | Causes skin irritation.  |
| H319                | Causes serious eye irritation.   |
| H335                | May cause respiratory irritation.  |

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*