

# Metal Hydride Gas Sensing Tape

## Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012

Date of issue: 02/25/2015

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Version: 1.0

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

#### 1.1. Product identifier

Product name : Metal Hydride Gas Sensing Tape  
Product code : Not available.

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

Use of the substance/mixture : Detection of metal hydride gases.

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

Galvanic Applied Sciences  
7000 Fisher Road SE  
Calgary AB, T2H 0W3 - Canada  
T 403-252-8470  
[dhaydt@galvanic.com](mailto:dhaydt@galvanic.com)

#### 1.4. Emergency telephone number

Emergency number : 403-252-8470

### SECTION 2: Hazards identification

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

##### GHS-US classification

Oxidising solid 2  
Skin irritation 2  
Eye irritation 2A

#### 2.2. Label elements

##### GHS-US labelling

Hazard pictograms (GHS-US) :



GHS03

GHS07

Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

May intensify fire; oxidizer. Causes skin irritation. Causes serious eye irritation.

Precautionary statements (GHS-US) :

Keep away from heat. Keep/Store away from clothing/combustible materials. Take any precaution to avoid mixing with combustibles. Wear protective gloves/eye protection/face protection. Wash hands thoroughly after handling. If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention. 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. Dispose of contents and container in accordance with all local, regional, national and international regulations.

#### 2.3. Other hazards

No additional information available

#### 2.4. Unknown acute toxicity (GHS-US)

3 percent of the mixture consists of ingredient(s) of unknown acute toxicity.

### SECTION 3: Composition/information on ingredients

#### 3.1. Substance

Not applicable

#### 3.2. Mixture

Name	Product identifier	%	GHS-US classification
Cellulose	(CAS No) 9004-34-6	60 – 100	Not classified.
Silver nitrate	(CAS No) 7761-88-8	1 – 5	Ox. Sol. 2 Skin Corr. 1B
Glycerin	(CAS No) 56-81-5	1 – 5	Not classified.

\* The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

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### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

- First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.
- First-aid measures after skin contact : In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if irritation develops and persists.
- First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. If irritation persists, get medical attention.
- First-aid measures after ingestion : If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

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

- Symptoms/injuries after inhalation : May cause respiratory tract irritation.
- Symptoms/injuries after skin contact : Causes skin irritation. Symptoms may include redness, edema, drying, defatting and cracking of the skin.
- Symptoms/injuries after eye contact : Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
- Symptoms/injuries after ingestion : May be harmful if swallowed. May cause stomach distress, nausea or vomiting.

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

Symptoms may not appear immediately. In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

- Suitable extinguishing media : Powder, water spray, foam, carbon dioxide.
- Unsuitable extinguishing media : None known.

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

- Fire hazard : Products of combustion may include, and are not limited to: oxides of carbon, oxides of nitrogen, silver, oxides of silver.

#### 5.3. Advice for firefighters

- Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA). May intensify fire; oxidiser.

### SECTION 6: Accidental release measures

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

- General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Eliminate sources of ignition.

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

- For containment : Pick up large pieces, then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).
- Methods for cleaning up : Vacuum or sweep material and place in a disposal container. Provide ventilation.

#### 6.3. Reference to other sections

See section 8 for further information on protective clothing and equipment and section 13 for advice on waste disposal.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

- Precautions for safe handling : Keep away from sources of ignition. Take any precaution to avoid mixing with combustibles. Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapours/spray. Do not swallow. When using do not eat, drink or smoke.
- Hygiene measures : Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

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

- Storage conditions : Keep out of the reach of children. Keep container tightly closed and dry. Keep/Store away from clothing/combustible materials. Protect from light. Store in a well-ventilated place.

#### 7.3. Specific end use(s)

Not available.

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### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

Cellulose (9004-34-6)		
ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	15 mg/m <sup>3</sup> (total dust) 5 mg/m <sup>3</sup> (respirable fraction)
Silver nitrate (7761-88-8)		
ACGIH	Not applicable	
OSHA	Not applicable	
Glycerin (56-81-5)		
ACGIH	Not applicable	
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	15 mg/m <sup>3</sup> (mist, total particulate) 5 mg/m <sup>3</sup> (mist, respirable fraction)

#### 8.2. Exposure controls

Appropriate engineering controls	: Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.
Personal protective equipment	: Avoid all unnecessary exposure.
Hand protection	: Neoprene or nitrile rubber gloves.
Eye protection	: Wear eye protection.
Skin and body protection	: Wear suitable protective clothing.
Respiratory protection	: In case of insufficient ventilation, wear suitable respiratory equipment. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Environmental exposure controls	: Maintain levels below Community environmental protection thresholds.
Other information	: Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking. Handle according to established industrial hygiene and safety practices.

### SECTION 9: Physical and chemical properties

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

Physical state	: Solid
Appearance	: Paper
Colour	: White
Odour	: Odourless
Odour threshold	: No data available
pH	: 3
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)	: Not flammable
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Partition coefficient: n-octanol/water	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

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Explosive properties	: No data available
Oxidising properties	: May intensify fire; oxidiser
Explosive limits	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No dangerous reaction known under conditions of normal use.

### 10.2. Chemical stability

Stable under normal storage conditions. May intensify fire; oxidiser. May decompose under the influence of light.

### 10.3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

### 10.4. Conditions to avoid

Heat. Incompatible materials. Light.

### 10.5. Incompatible materials

Strong bases. Strong reducing agents. Alcohols. Ammonia. Magnesium.

### 10.6. Hazardous decomposition products

May include, and are not limited to: oxides of carbon, oxides of nitrogen, silver, oxides of silver.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified.

Metal Hydride Gas Sensing Tape	
LD50 oral rat	> 2000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat	> 5 mg/l/4h
Cellulose (9004-34-6)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rat	> 2000 mg/kg
LC50 inhalation rat	> 5800 mg/m <sup>3</sup> /4h
Glycerin (56-81-5)	
LD50 oral rat	12600 mg/kg
LD50 dermal rabbit	> 10 g/kg
LC50 inhalation rat	> 570 mg/m <sup>3</sup> /1h

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitisation	: Based on available data, the classification criteria are not met.
Germ cell mutagenicity	: Based on available data, the classification criteria are not met.
Carcinogenicity	: Based on available data, the classification criteria are not met.
Reproductive toxicity	: Based on available data, the classification criteria are not met.
Specific target organ toxicity (single exposure)	: Based on available data, the classification criteria are not met.
Specific target organ toxicity (repeated exposure)	: Based on available data, the classification criteria are not met.
Aspiration hazard	: Based on available data, the classification criteria are not met.
Symptoms/injuries after inhalation	: May cause respiratory tract irritation.
Symptoms/injuries after skin contact	: Causes skin irritation. Symptoms may include redness, edema, drying, defatting and cracking of the skin.
Symptoms/injuries after eye contact	: Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
Symptoms/injuries after ingestion	: May be harmful if swallowed. May cause stomach distress, nausea or vomiting.

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### SECTION 12: Ecological information

#### 12.1. Toxicity

Ecology – general : Very toxic to aquatic life with long lasting effects.

#### 12.2. Persistence and degradability

##### Metal Hydride Gas Sensing Tape

Persistence and degradability	Not established.
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#### 12.3. Bioaccumulative potential

##### Metal Hydride Gas Sensing Tape

Bioaccumulative potential	Not established.
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#### 12.4. Mobility in soil

No additional information available

#### 12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Waste disposal recommendations : This material must be disposed of in accordance with all local, state, provincial, and federal regulations. The generation of waste should be avoided or minimized wherever possible.

Additional information : Hazardous waste due to potential risk of explosion.

### SECTION 14: Transport information

In accordance with DOT

UN-No.(DOT) : UN1493

Proper Shipping Name (DOT) : Silver nitrate

Department of Transportation (DOT) Hazard Classes : 5.1

Hazard labels (DOT) :



Packing group (DOT) : II

#### Additional information

Other information : No supplementary information available.

Special transport precautions : Do not handle until all safety precautions have been read and understood.

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

##### Glycerin (56-81-5)

EPA TSCA Regulatory Flag	Y2 - Y2 - indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.
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#### 15.2. US State regulations

##### Metal Hydride Gas Sensing Tape

State or local regulations	This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.
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### SECTION 16: Other information

Date of issue : 02/25/2015

Other information : None.

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