

# Safety Data Sheet

complying with Regulation 1907/2006/EC (REACH  
Regulation, 453/2010/EC and Regulation No 1272/2008/EC  
(CLP))

Printing date 08.12.2014

Version number 1

Revision: 08.12.2014

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

### · 1.1 Product identifier

· **Trade name:** V-ISO M200

· **CAS Number:**  
9016-87-9

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.

· **Application of the substance / the mixture** Polyurethane component, industrial chemicals

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

· **Manufacturer/Supplier:**

VIOPOL S.A.

55th km Nat. Road Athens-Lamia

32011 Inofyta

Tel. : +302262032027

Fax : +302262031763

e-mail : info@viopol.gr

### · 1.4 Emergency telephone number:

National Poisoning Center

Emergency telephone number: 112

## SECTION 2: Hazards identification

### · 2.1 Classification of the substance or mixture

· **Classification according to Regulation EC No 1272/2008 CLP**



GHS08 health hazard

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Carc. 2 H351 Suspected of causing cancer.

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.



GHS07

Acute Tox. 4 H332 Harmful if inhaled.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

STOT SE 3 H335 May cause respiratory irritation.

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· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

 Xn; Harmful

R20-40-48/20: Harmful by inhalation. Limited evidence of a carcinogenic effect.  
 Harmful: danger of serious damage to health by prolonged exposure through inhalation.

 Xn; Sensitising

R42/43: May cause sensitisation by inhalation and skin contact.

 Xi; Irritant

R36/37/38: Irritating to eyes, respiratory system and skin.

Carc. Cat. 3

· **Information concerning particular hazards for human and environment:**

Not applicable.

· **Classification system:**

The classification of the product is according CLP Regulation 1272/2008/EC and European Directive 99/45/EC.

· **2.2 Label elements**

· **Labelling according to Regulation EC No 1272/2008 CLP**

The substance is classified and labelled according to the CLP regulation.

· **Hazard pictograms**



GHS07 GHS08

· **Signal word** Danger

· **Hazard-determining components of labelling:**

diphenylmethanediisocyanate, isomeres and homologues

· **Hazard statements**

H332 Harmful if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H317 May cause an allergic skin reaction.

H351 Suspected of causing cancer.

H335 May cause respiratory irritation.

H373 May cause damage to organs through prolonged or repeated exposure.

· **Precautionary statements**

P280 Wear protective gloves/protective clothing/eye protection/face protection.

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- P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
- 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.
- P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P312 Call a POISON CENTER/doctor if you feel unwell.
- P403+P233 Store in a well-ventilated place. Keep container tightly closed.
- P405 Store locked up.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Additional information:**

- Contains isocyanates. May produce an allergic reaction.

- **2.3 Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

## SECTION 3: Composition/information on ingredients

- **3.1 Chemical characterisation: Substances**

- **CAS No. Description**

- 9016-87-9 diphenylmethanediisocyanate, isomeres and homologues

## SECTION 4: First aid measures

- **4.1 Description of first aid measures**

- **General information:**

- Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

- Take affected persons out into the fresh air.

- Seek immediate medical advice.

- **After inhalation:**

- Supply fresh air and to be sure call for a doctor.

- In case of unconsciousness place patient stably in side position for transportation.

- Seek medical treatment in case of complaints.

- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.

- **After eye contact:**

- Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids.

- Check for and remove any contact lenses.

- Continue to rinse for at least 10 minutes.

- Get medical attention if irritation occurs.

- **After swallowing:**

- Drink plenty of water and provide fresh air. Call for a doctor immediately.

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Seek immediate medical advice.

- **4.2 Most important symptoms and effects, both acute and delayed**

Symptoms: tightness in the chest, coughing, difficulty breathing

Hazards: Symptoms can appear later.

- **4.3 Indication of any immediate medical attention and special treatment needed**

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote, administer corticosteroid dose aerosol to prevent pulmonary edema.

### SECTION 5: Firefighting measures

- **5.1 Extinguishing media**

- **Suitable extinguishing agents:**

CO<sub>2</sub>

Use fire extinguishing methods suitable to surrounding conditions.

- **5.2 Special hazards arising from the substance or mixture**

In case of fire, the following can be released:

Carbon dioxide (CO<sub>2</sub>)

Carbon monoxide (CO)

Hydrogen cyanide (HCN)

Nitrogen oxides (NO<sub>x</sub>)

isocyanate

- **5.3 Advice for firefighters**

- **Protective equipment:**

Mouth respiratory protective device.

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

- **Additional information**

Collect contaminated fire fighting water separately. It must not enter the sewage system.

### SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation.

Use respiratory protective device against the effects of fumes/dust/aerosol.

- **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

- **6.3 Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Treat with 2 % sodium hydroxide solution.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

- **6.4 Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

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See Section 13 for disposal information.

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## SECTION 7: Handling and storage

### · 7.1 Precautions for safe handling

Thorough dedusting.

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of dust.

Avoid contact with skin, eyes and clothing.

Avoid splashes or spray in enclosed areas.

Protect against moisture.

Products freshly manufactured from isocyanates can contain incompletely reacted isocyanates and other dangerous substances.

· **Information about fire - and explosion protection:** No special measures required.

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

#### · Storage:

#### · Requirements to be met by storerooms and receptacles:

Store in a cool location.

Suitable materials for containers: carbon steel (iron), High density polyethylene (HDPE), Low density polyethylene (LDPE), tin (tinplate), Stainless steel 1.4301 (V2)

Unsuitable materials for containers: paper, board

Store in a cool, dry place away from sources of ignition.

Danger of bursting when sealed gastight.

· **Information about storage in one common storage facility:** Not required.· **Further information about storage conditions:** Keep container tightly sealed.· **7.3 Specific end use(s)** No further relevant information available.

## SECTION 8: Exposure controls/personal protection

· **Additional information about design of technical facilities:** No further data; see item 7.

### · 8.1 Control parameters

· **Ingredients with limit values that require monitoring at the workplace:****9016-87-9 diphenylmethanediisocyanate, isomeres and homologues**WEL Short-term value: 0.07 mg/m<sup>3</sup>Long-term value: 0.02 mg/m<sup>3</sup>

Sen; as -NCO

· **Additional information:** The lists valid during the making were used as basis.

### · 8.2 Exposure controls

· **Personal protective equipment:**· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

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Wash hands before breaks and at the end of work.

- **Respiratory protection:**



In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

Respiratory protection in case of vapor release / aerosol. Combination filter EN 141 Type A-P2 (for gases / vapors of organic compounds and solid and liquid particles).

- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Butyl rubber, Thickness: 0.7mm

Nitrile gloves. Thickness: 0,4 mm

Chloroprene rubber, CR

- **Penetration time of glove material**

The determined penetration times according to EN 374 part III are not performed under practical conditions. Therefore a maximum wearing time, which corresponds to 50% of the penetration time, is recommended.

- **Not suitable are gloves made of the following materials:**

PVC or PE gloves

polyvinylchloride (PVC) - 0.7 mm coating thickness

- **Eye protection:**



Safety glasses with side-shields (frame goggles) (e.g. EN 166)

- **Body protection:** Safety shoes (e.g. according to EN 20346)

- **Risk management measures**

Do not breathe vapour/spray. With products freshly manufactured from isocyanates body protection and chemical resistant protective gloves is recommended. Hands and/or face should be washed before breaks and at the end of the shift. At the end of the shift the skin should be cleaned and

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skin-care agents applied.

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### SECTION 9: Physical and chemical properties

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

##### · General Information

##### · Appearance:

· <b>Form:</b>	Liquid
· <b>Colour:</b>	Dark brown
· <b>Odour:</b>	earthy, musty
· <b>Odour threshold:</b>	Not determined

· <b>pH value:</b>	Not applicable
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· <b>Melting point/Melting range:</b>	<10 °C
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· <b>Boiling point/Boiling range:</b>	330 °C
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· <b>Flash point:</b>	>204 °C
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· <b>Flammability (solid, gaseous):</b>	Product is not flammable.
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· <b>Autoignition temperature:</b>	>600 °C
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· <b>Decomposition temperature:</b>	Not determined
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· <b>Self-igniting:</b>	Not determined.
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· <b>Danger of explosion:</b>	Product does not present an explosion hazard.
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##### · Explosion limits:

· <b>Lower:</b>	Not determined
· <b>Upper:</b>	Not determined

· <b>Vapour pressure at 25 °C:</b>	0.01 Pa
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· <b>Density at 20 °C:</b>	1.23 g/cm <sup>3</sup>
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· <b>Relative density</b>	Not determined
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· <b>Vapour density</b>	Not applicable
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· <b>Evaporation rate</b>	Not applicable
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· <b>Solubility in / Miscibility with water:</b>	Hydrolyses
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· <b>Partition coefficient (n-octanol/water):</b>	Not determined
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##### · Viscosity:

· <b>Dynamic at 25 °C:</b>	170-250 mPas (DIN 53018)
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· <b>Kinematic:</b>	Not applicable
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##### · Solvent content:

· <b>VOC (EC)</b>	0.00 %
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· **9.2 Other information** No further relevant information available.

### SECTION 10: Stability and reactivity

- **10.1 Reactivity**
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** Stable at environment temperature.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** Temperature: < 15 °C. Avoid moisture.
- **10.5 Incompatible materials:** acids, alcohols, amines, water, alkalines
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

### SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:**

· **LD/LC50 values relevant for classification:**

#### 9016-87-9 diphenylmethanediisocyanate, isomeres and homologues

Oral	LC50	> 10000 mg/kg (rat)
Dermal	LC50	> 10000 mg/kg (rabbit)
Inhalative	LC50/4h (όέυíáò êáé óóáãñíβáéá)	0.49 mg/l (rat) (OECD 401)

- **Primary irritant effect:**
  - **on the skin:** Irritant to skin and mucous membranes.
  - **on the eye:** Irritating effect.
- **Sensitisation:**
  - Sensitisation possible through inhalation.
  - Sensitisation possible through skin contact.
  - Sensitising effect by skin contact is possible by prolonged exposure.
- **Sensitisation** Sensitization possible through skin contact
- **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**  
Carc. 2

### SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:**

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Toxicity to fish:

LC0 (96 h) &gt; 1,000 mg/l, Fish (other)

Aquatic invertebrates:

EC0 (24 h) &gt; 500 mg/l, daphnia (other)

Aquatic plants:

EC0 (72 h) 1,640 mg/l, Scenedesmus subspicatus (OECD Guideline 201)

- **12.2 Persistence and degradability**

Assessment biodegradation and elimination (H<sub>2</sub>O):

Poorly biodegradable.

Elimination information: &lt; 10 % BOD of the ThOD (28 d) (OECD Guideline 302 C) (aerobic, activated sludge) Under test conditions no biodegradation observed.

- **12.3 Bioaccumulative potential** Not bioaccumulative.

- **12.4 Mobility in soil** No further relevant information available.

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

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **12.6 Other adverse effects**

The product does not contain substances that are listed in Annex I of Regulation (EC) 2037/2000 on substances that deplete the ozone layer.

Adsorbable organically-bound halogen (AOX): This product contains no organically-bound halogen.

## SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**

- **Recommendation**



Dispose according to National Regulations.



Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Contact manufacturer for recycling information.

- **Uncleaned packaging:**

- **Recommendation:**

Dispose of isocyanate waste in dry containers and never mix together with other wastes (reaction, dangerous pressure build up).

Disposal must be made according to official regulations.

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**SECTION 14: Transport information**

- |   |                 |
|---|-----------------|
| · <b>14.1 UN-Number</b><br>· <b>ADR, ADN, IMDG, IATA</b>                                    | Void            |
| · <b>14.2 UN proper shipping name</b><br>· <b>ADR, ADN, IMDG, IATA</b>                      | Void            |
| · <b>14.3 Transport hazard class(es)</b><br>· <b>ADR, ADN, IMDG, IATA</b><br>· <b>Class</b> | Void            |
| · <b>14.4 Packing group</b><br>· <b>ADR, IMDG, IATA</b>                                     | Void            |
| · <b>14.5 Environmental hazards:</b>  | Not applicable. |
| · <b>14.6 Special precautions for user</b>  | Not applicable. |
| · <b>14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>       | Not applicable. |
| · <b>UN "Model Regulation":</b>   | -               |

**SECTION 15: Regulatory information**

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**  
The mixture classification is according to CLP Regulation 1272/2008/EC and European Directive 99/45/EC.
  - **Labelling according to Regulation (EC) No 1272/2008** Label elements in Section 2.2
  - **National regulations:**
  - **Other regulations, limitations and prohibitive regulations**
- |  |
|--|
| · <b>Substances of very high concern (SVHC) according to REACH, Article 57</b><br>The substance is not SVCH. |
|--|
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**SECTION 16: Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing MSDS:**  
SUSTCHEM Engineering Ltd  
REACH & Chemical Services Department

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**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

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Acute Tox. 4: Acute toxicity, Hazard Category 4

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1

Skin Sens. 1: Sensitisation - Skin, Hazard Category 1

Carc. 2: Carcinogenicity, Hazard Category 2

STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2

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