



HD METABOLITES NATIVE STANDARD 100 UG/ML IN METHANOL

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 11/02/2016

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Supersedes: 11/02/2016

Version: 1.1

ES-5562

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

1.1. Product identifier

Product form : Mixtures
Product name : HD METABOLITES NATIVE STANDARD 100 UG/ML IN METHANOL
Product code : ES-5562

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

1.2.1. Relevant identified uses

Industrial/Professional use spec : 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

Cambridge Isotope Laboratories, Inc.
50 Frontage Road
Andover, MA 01810
USA

USA: 1-800-322-1174 Int: 1-978-749-8000

cilsales@isotope.com www.isotope.com

Emergency telephone number

Emergency numbers:

Chemtrec: 1-800-424-9300 (24 hours)

International: 1-703-741-5970 (24 hours)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

| | |
|----------------------------------|------|
| Flam. Liq. 2 | H225 |
| Acute Tox. 3 (Oral) | H301 |
| Acute Tox. 3 (Dermal) | H311 |
| Acute Tox. 3 (Inhalation:vapour) | H331 |
| Skin Irrit. 2 | H315 |
| Eye Irrit. 2 | H319 |
| STOT SE 1 | H370 |

Full text of hazard classes and H-statements : see section 16

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

F; R11

T; R39/23/24/25

Xi; R36/38

Full text of R-phrases: see section 16

GHS-US classification

| | |
|----------------------------------|------|
| Flam. Liq. 2 | H225 |
| Acute Tox. 3 (Oral) | H301 |
| Acute Tox. 3 (Dermal) | H311 |
| Acute Tox. 3 (Inhalation:vapour) | H331 |
| Skin Irrit. 2 | H315 |
| Eye Irrit. 2A | H319 |
| STOT SE 1 | H370 |

Full text of H statements : see section 16

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Adverse physicochemical, human health and environmental effects

Eyes, Kidney, Liver, Heart, Central nervous system. Highly flammable liquid and vapour. Causes damage to organs (eyes, kidneys, liver, heart, central nervous system) (if inhaled, if swallowed, in contact with skin). Toxic in contact with skin. Toxic if inhaled. Toxic if swallowed. Causes skin irritation. Causes serious eye irritation.

2.2. Label elements

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

Hazard pictograms (CLP)



Signal word (CLP)

: Danger

Hazard statements (CLP)

: H225 - Highly flammable liquid and vapour
H301+H311+H331 - Toxic if swallowed, in contact with skin or if inhaled
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H370 - Causes damage to organs (eyes, heart, kidneys, liver, central nervous system) (in contact with skin, if inhaled, if swallowed)

Precautionary statements (CLP)

: P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 - Keep container tightly closed.
P240 - Ground/bond container and receiving equipment.
P241 - Use explosion-proof electrical, lighting, ventilating equipment
P260 - Do not breathe dust, mist, vapors, fume, gas, spray.
P264 - Wash hands, forearms and face thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.

GHS-US labeling

Hazard pictograms (GHS-US)



Signal word (GHS-US)

: Danger

Hazard statements (GHS-US)

: H225 - Highly flammable liquid and vapour
H301+H311+H331 - Toxic if swallowed, in contact with skin or if inhaled
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H370 - Causes damage to organs (eyes, kidneys, liver, heart, central nervous system) (Dermal, Inhalation, oral)

Precautionary statements (GHS-US)

: P210 - Keep away from heat, open flames, sparks. - No smoking.
P233 - Keep container tightly closed.
P240 - Ground/Bond container and receiving equipment
P241 - Use explosion-proof electrical, lighting, ventilating equipment
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P260 - Do not breathe dust, fume, mist, gas, spray, vapors.
P261 - Avoid breathing dust, fume, gas, spray, vapors, mist.
P264 - Wash hands, forearms and face thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear protective clothing, protective gloves.
P301+P310 - If swallowed: Immediately call a doctor, a POISON CENTER
P302+P352 - If on skin: Wash with plenty of water
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P307+P311 - If exposed: Call a poison center/doctor
P311 - Call a doctor, a POISON CENTER

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P312 - Call a doctor, a POISON CENTER if you feel unwell
P321 - Specific treatment (see Hazardous component(s) for labeling on this label)
P322 - Specific treatment (see Hazard pictograms (CLP) on this label)
P330 - Rinse mouth.
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P361+P364 - Take off immediately all contaminated clothing and wash it before reuse.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P370+P378 - In case of fire: Use alcohol resistant foam, carbon dioxide (CO₂), dry extinguishing powder to extinguish.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P403+P235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3. Other hazards

PBT: not relevant – no registration required

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

| Name | Product identifier | % | Classification according to Directive 67/548/EEC |
|----------------------------------|---|-----------|--|
| 100% METHANOL UNLABELED | (CAS-No.) 67-56-1 (EC-No.) 200-659-6 (EC Index-No.) 603-001-00-X (REACH-no) 01-2119433307-44 | 99.987359 | F; R11 T; R39/23/24/25 Xi; R36/38 |
| THIODIGLYCOL SULFONE UNLABELED | (CAS-No.) 2580-77-0 (EC-No.) 219-948-3 | 0.013 | R42 |
| THIODIGLYCOL SULFOXIDE UNLABELED | (CAS-No.) 3085-45-8 | 0.013 | F; R11 T; R23/24/25 Xn; R68/20/21/22 |
| 1,4-DITHIANE UNLABELED | (CAS-No.) 505-29-3 (EC-No.) 208-007-2 | 0.013 | Xi; R36/37/38 |
| 1,4-THIOXANE UNLABELED | (CAS-No.) 15980-15-1 (EC-No.) 240-117-6 | 0.013 | Xi; R36/37/38 R10 |
| THIODIGLYCOL UNLABELED | (CAS-No.) 111-48-8 (EC-No.) 203-874-3 (EC Index-No.) 603-081-00-6 | 0.013 | Xi; R36 |

| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|----------------------------------|---|-----------|--|
| 100% METHANOL UNLABELED | (CAS-No.) 67-56-1 (EC-No.) 200-659-6 (EC Index-No.) 603-001-00-X (REACH-no) 01-2119433307-44 | 99.987359 | Flam. Liq. 2, H225 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation:vapour), H331 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 1, H370 |
| THIODIGLYCOL SULFONE UNLABELED | (CAS-No.) 2580-77-0 (EC-No.) 219-948-3 | 0.013 | Resp. Sens. 1, H334 |
| THIODIGLYCOL SULFOXIDE UNLABELED | (CAS-No.) 3085-45-8 | 0.013 | Acute Tox. 4 (Oral), H302 |
| 1,4-DITHIANE UNLABELED | (CAS-No.) 505-29-3 (EC-No.) 208-007-2 | 0.013 | Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 |
| 1,4-THIOXANE UNLABELED | (CAS-No.) 15980-15-1 (EC-No.) 240-117-6 | 0.013 | Flam. Liq. 3, H226 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 |
| THIODIGLYCOL UNLABELED | (CAS-No.) 111-48-8 (EC-No.) 203-874-3 (EC Index-No.) 603-081-00-6 | 0.013 | Eye Irrit. 2, H319 |

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| Name | Product identifier | % | GHS-US classification |
|-------------------------|--------------------|-----------|---|
| 100% METHANOL UNLABELED | (CAS-No.) 67-56-1 | 99.987359 | Flam. Liq. 2, H225 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation:vapour), H331 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 1, H370 |

Full text of R- and H- phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

| | |
|---------------------------------------|---|
| First-aid measures general | : If medical advice is needed, have product container or label at hand. Call a physician immediately. Evacuate danger area. |
| First-aid measures after inhalation | : Remove person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration. Call a doctor. |
| First-aid measures after skin contact | : Rinse skin with water/shower. Take immediately victim to hospital. Remove/Take off immediately all contaminated clothing. If skin irritation occurs: Get medical advice/attention. |
| First-aid measures after eye contact | : Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. |
| First-aid measures after ingestion | : Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth. Call a physician immediately. |

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

| | |
|-------------------------------------|---|
| Symptoms/effects after inhalation | : Toxic if inhaled. |
| Symptoms/effects after skin contact | : Toxic in contact with skin. Causes skin irritation. |
| Symptoms/effects after eye contact | : Causes serious eye irritation. |
| Symptoms/effects after ingestion | : Toxic if swallowed. |

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 | : Dry powder. Dry sand. |
| Unsuitable extinguishing media | : Do not use a heavy water stream. |

5.2. Special hazards arising from the substance or mixture

| | |
|-------------|---|
| Fire hazard | : Highly flammable liquid and vapour. |
| Reactivity | : Vapors may form flammable mixture with air. Highly flammable liquid and vapour. |

5.3. Advice for firefighters

| | |
|--------------------------------|--|
| Firefighting instructions | : Do not enter fire area without proper protective equipment, including respiratory protection. |
| Protection during firefighting | : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing. Wear recommended personal protective equipment. |
| Other information | : Use water spray to cool exposed surfaces. |

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

| | |
|----------------------|---|
| Emergency procedures | : Wear respiratory protection. Do not breathe dust, mist, gas, spray, vapors, fume. Avoid contact with skin, eyes and clothing. Ventilate spillage area. Remove all sources of ignition. No open flames, no sparks, and no smoking. Ensure adequate air ventilation. Special attention should be given to low areas/pits where flammable vapors can accumulate. |
|----------------------|---|

6.1.2. For emergency responders

| | |
|----------------------|---|
| Protective equipment | : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection". |
|----------------------|---|

6.2. Environmental precautions

Prevent entry to sewers and public waters. Do not allow to enter drains or water courses. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

| | |
|-----------------|---------------------------|
| For containment | : Dike and contain spill. |
|-----------------|---------------------------|

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| | |
|-------------------------|--|
| Methods for cleaning up | : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters. This material and its container must be disposed of in a safe way, and as per local legislation. |
| Other information | : Dispose of materials or solid residues at an authorized site. |

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

| | |
|-----------------------------------|--|
| Additional hazards when processed | : Handle empty containers with care because residual vapors are flammable. |
| Precautions for safe handling | : No open flames. No smoking. Use only non-sparking tools. Avoid breathing dust, mist or spray. |
| Hygiene measures | : Do not eat, drink or smoke when using this product. Wash Both hands thoroughly after handling. |

7.2. Conditions for safe storage, including any incompatibilities

| | |
|------------------------|--|
| Technical measures | : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical equipment. |
| Storage conditions | : Store refrigerated (-5 C to 5 C). Protect from light. |
| Incompatible materials | : Heat sources. |

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| HD METABOLITES NATIVE STANDARD 100 UG/ML IN METHANOL | | |
|--|---------------------------------------|--|
| Italy - Portugal - USA ACGIH | ACGIH TWA (ppm) | 200.00000000 ppm Basis: USA. ACGIH Threshold Limit Values (TLV) |
| Italy - Portugal - USA ACGIH | ACGIH STEL (ppm) | 250 ppm Basis: USA. ACGIH Threshold Limit Values (TLV) |
| Italy - Portugal - USA ACGIH | Remark (ACGIH) | Headache. Nausea. Dizziness. Eye damage. Substances for which there is a Biological Exposure Index or Indices (see BEI section). Danger of cutaneous absorption. |
| USA NIOSH | NIOSH REL (TWA) (mg/m ³) | 260 mg/m ³ Basis: NIOSH Recommended Exposure Limits |
| USA NIOSH | NIOSH REL (TWA) (ppm) | 200 ppm Basis: NIOSH Recommended Exposure Limits |
| USA NIOSH | NIOSH REL (STEL) (mg/m ³) | 325 mg/m ³ Basis: NIOSH Recommended Exposure Limits |
| USA NIOSH | NIOSH REL (STEL) (ppm) | 250 ppm Basis: NIOSH Recommended Exposure Limits |
| USA NIOSH | Remark (NIOSH) | Potential for dermal absorption. |
| USA OSHA | OSHA PEL (TWA) (mg/m ³) | 260 mg/m ³ Basis: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants - 1910.1000. California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
| USA OSHA | OSHA PEL (TWA) (ppm) | 200 ppm Basis: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants - 1910.1000. California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
| USA OSHA | OSHA PEL (STEL) (mg/m ³) | 325 mg/m ³ Basis: USA. OSHA - Table Z-1 Limits for Air Contaminants - 1910.1000. California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
| USA OSHA | OSHA PEL (STEL) (ppm) | 250 ppm Basis: USA. OSHA - Table Z-1 Limits for Air Contaminants - 1910.1000. California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
| USA OSHA | OSHA PEL (Ceiling) (ppm) | 1000 ppm California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
| USA OSHA | Remark (OSHA) | The value in mg/m ³ is approximate. Skin notation. |

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| 100% METHANOL UNLABELED (67-56-1) | | |
|-----------------------------------|---------------------------------------|--|
| Italy - Portugal - USA ACGIH | ACGIH TWA (ppm) | 200.00000000 ppm Basis: USA. ACGIH Threshold Limit Values (TLV) |
| Italy - Portugal - USA ACGIH | ACGIH STEL (ppm) | 250 ppm Basis: USA. ACGIH Threshold Limit Values (TLV) |
| Italy - Portugal - USA ACGIH | Remark (ACGIH) | Headache. Nausea. Dizziness. Eye damage. Substances for which there is a Biological Exposure Index or Indices (see BEI section). Danger of cutaneous absorption. |
| USA NIOSH | NIOSH REL (TWA) (mg/m ³) | 260 mg/m ³ Basis: NIOSH Recommended Exposure Limits |
| USA NIOSH | NIOSH REL (TWA) (ppm) | 200 ppm Basis: NIOSH Recommended Exposure Limits |
| USA NIOSH | NIOSH REL (STEL) (mg/m ³) | 325 mg/m ³ Basis: NIOSH Recommended Exposure Limits |
| USA NIOSH | NIOSH REL (STEL) (ppm) | 250 ppm Basis: NIOSH Recommended Exposure Limits |
| USA NIOSH | Remark (NIOSH) | Potential for dermal absorption. |
| USA OSHA | OSHA PEL (TWA) (mg/m ³) | 260 mg/m ³ Basis: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants - 1910.1000. California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
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| USA OSHA | OSHA PEL (STEL) (ppm) | 250 ppm Basis: USA. OSHA - Table Z-1 Limits for Air Contaminants - 1910.1000. California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
| USA OSHA | OSHA PEL (Ceiling) (ppm) | 1000 ppm California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
| USA OSHA | Remark (OSHA) | The value in mg/m ³ is approximate. Skin notation. |

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DNEL/DMEL (Workers)

| | |
|---------------------------------------|-------------------------|
| Acute - systemic effects, dermal | 40 mg/kg bodyweight/day |
| Acute - systemic effects, inhalation | 260 mg/m ³ |
| Acute - local effects, dermal | 260 mg/cm ² |
| Long-term - systemic effects, dermal | 40 mg/kg bodyweight/day |
| Long-term - local effects, dermal | 260 mg/cm ² |
| Long-term - local effects, inhalation | 260 mg/m ³ |

DNEL/DMEL (General population)

| | |
|--|------------------------|
| Acute - systemic effects, dermal | 8 mg/kg body weight |
| Acute - systemic effects, inhalation | 50 mg/m ³ |
| Acute - systemic effects, oral | 8 mg/kg body weight |
| Acute - local effects, inhalation | 50 mg/m ³ |
| Long-term - systemic effects, oral | 8 mg/kg bodyweight/day |
| Long-term - systemic effects, inhalation | 50 mg/m ³ |
| Long-term - systemic effects, dermal | 8 mg/kg bodyweight/day |
| Long-term - local effects, inhalation | 50 mg/m ³ |

PNEC (Water)

| | |
|--------------------------|-----------|
| PNEC aqua (freshwater) | 154 mg/l |
| PNEC aqua (marine water) | 15.4 mg/l |

PNEC (Sediment)

| | |
|----------------------------|-----------------|
| PNEC sediment (freshwater) | 570.4 mg/kg dwt |
|----------------------------|-----------------|

PNEC (Soil)

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|-----------------------------|----------------|
| PNEC soil | 23.5 mg/kg dwt |
| PNEC (STP) | |
| PNEC sewage treatment plant | 100 mg/kg |

8.2. Exposure controls

- Appropriate engineering controls : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.
- Personal protective equipment : Gloves. Protective clothing. Protective goggles. Self-contained breathing apparatus.



- Materials for protective clothing : Wear suitable protective clothing and gloves.
- Hand protection : Wear suitable protective clothing and gloves.
- Eye protection : Wear eye protection. Chemical goggles or face shield with safety glasses.
- Skin and body protection : Wear suitable protective clothing, gloves and eye/face protection.
- Respiratory protection : In case of inadequate ventilation wear respiratory protection. Approved supplied air respirator.
- Environmental exposure controls : Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

The properties listed below are for the solvent, the main component of this mixture.

- Physical state : Liquid
- Appearance : Liquid
- Molecular mass : 32.04 g/mol
- Color : Colorless
- Odor : Pungent
- Odor threshold : No data available
- pH : No data available
- Relative evaporation rate (butyl acetate=1) : No data available
- Melting point : -98 °C (-144 °F)
- Freezing point : No data available
- Boiling point : 64.7 °C (148.5 °F)
- Flash point : 9.7 °C (49.5 °F) - closed cup
- Auto-ignition temperature : 455 °C (851 °F) at 1,013 hPa (760 mmHg)
- Decomposition temperature : No data available
- Flammability (solid, gas) : No data available
- Vapor pressure : 130.3 hPa (97.7 mmHg) at 20 °C (68 °F); 169.27 hPa (126.96 mmHg) at 25 °C (77 °F)
- Vapor pressure at 50 °C : 546.6 hPa (410 mmHg) at 50 °C (122 °F)
- Relative vapor density at 20 °C : 1.11
- Relative density : No data available
- Specific gravity / density : 0.791 g/ml at 25 °C (77 °F)
- Solubility : Water: Completely miscible
- Log Pow : -0.77
- Log Kow : No data available
- Viscosity, kinematic : No data available
- Viscosity, dynamic : No data available
- Explosive properties : Product is not explosive.
- Oxidizing properties : Non oxidizing material according to EC criteria.
- Explosion limits : 6 - 36 % (V)

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Vapors may form flammable mixture with air. Highly flammable liquid and vapour.

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10.2. Chemical stability

See storage and expiration date on CoA.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

Acid anhydrides. Acid chlorides. Oxidizing agent. Alkali Metal Amides. Reducing agents. Acids.

10.6. Hazardous decomposition products

Carbon oxides (CO, CO₂).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Toxic if swallowed. Dermal: Toxic in contact with skin. Inhalation:vapour: Toxic if inhaled.

| HD METABOLITES NATIVE STANDARD 100 UG/ML IN METHANOL | |
|--|--|
| LD50 oral rat | 1187 - 2769 mg/kg |
| LD50 dermal rabbit | 17100 mg/kg |
| LC50 inhalation rat (mg/l) | 128.2 mg/l/4h ; 87.6 mg/l - 6 h |
| ATE CLP (oral) | 100.000 mg/kg body weight |
| ATE CLP (dermal) | 300.000 mg/kg body weight |
| ATE CLP (vapors) | 3.000 mg/l/4h |
| ATE CLP (dust, mist) | 128.200 mg/l/4h |
| LDLO, oral, human | 143 mg/kg Remarks: Lungs, Thorax, or Respiration: Dyspnea. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. |

| THIODIGLYCOL UNLABELED (111-48-8) | |
|-----------------------------------|---------------------------|
| LD50 oral rat | 6610 mg/kg |
| LD50 dermal rabbit | 23640 mg/kg |
| ATE CLP (oral) | 98.000 mg/kg body weight |
| ATE CLP (dermal) | 112.000 mg/kg body weight |
| ATE CLP (gases) | 625.000 ppmV/4h |
| ATE CLP (vapors) | 2.000 mg/l/4h |
| ATE CLP (dust, mist) | 2.000 mg/l/4h |

| 1,4-DITHIANE UNLABELED (505-29-3) | |
|-----------------------------------|--|
| LD50 oral rat | 2768 mg/kg Behavioral: Ataxia. Lungs, Thorax, or Respiration: Dyspnea. |

| 1,4-THIOXANE UNLABELED (15980-15-1) | |
|-------------------------------------|------------|
| LD50 oral rat | 2830 mg/kg |

| 100% METHANOL UNLABELED (67-56-1) | |
|-----------------------------------|--|
| LD50 oral rat | 1187 - 2769 mg/kg |
| LD50 dermal rabbit | 17100 mg/kg |
| LC50 inhalation rat (mg/l) | 128.2 mg/l/4h ; 87.6 mg/l - 6 h |
| ATE CLP (oral) | 100.000 mg/kg body weight |
| ATE CLP (dermal) | 300.000 mg/kg body weight |
| ATE CLP (vapors) | 3.000 mg/l/4h |
| ATE CLP (dust, mist) | 128.200 mg/l/4h |
| LDLO, oral, human | 143 mg/kg Remarks: Lungs, Thorax, or Respiration: Dyspnea. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. |

| | |
|-----------------------------------|---|
| Skin corrosion/irritation | : Skin. Rabbit. Result: No skin irritation |
| Serious eye damage/irritation | : Eyes. Rabbit. Result: No eye irritation |
| Respiratory or skin sensitization | : Maximisation Test . Guinea pig. Did not cause sensitization. (OECD 406 method) |
| Germ cell mutagenicity | : AMES test : S. typhimurium. Result: negative. fibroblast. Result: Negative. Mutation in mammalian somatic cells. Mutagenicity (in vivo mammalian bone-marrow cystogenetic test, chromosomal analysis) - Mouse - male and female Result: negative. Mouse - male and female. Result: Negative |
| Carcinogenicity | : Not classified |
| Reproductive toxicity | : Damage to fetus not classifiable. Fertility classification not possible from current data. |

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| | |
|---|---|
| Specific target organ toxicity – single exposure | : Causes damage to organs through prolonged or repeated exposure Causes damage to organs |
| Specific target organ toxicity – repeated exposure | : The substance or mixture is not classified as specific target organ toxicant, repeated exposure. No data available |
| Aspiration hazard | : No aspiration toxicity classification. |
| Potential Adverse human health effects and symptoms | : 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. Effects due to Ingestion may include: Headache. Dizziness. Drowsiness. metabolic acidosis. Coma. May be fatal if swallowed and enters airways. If swallowed there is a risk of blindness. Effects on humans. stomach. |
| Symptoms/effects after inhalation | : Toxic if inhaled. |
| Symptoms/effects after skin contact | : Toxic in contact with skin. Causes skin irritation. |
| Symptoms/effects after eye contact | : Causes serious eye irritation. |
| Symptoms/effects after ingestion | : Toxic if swallowed. |

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

| HD METABOLITES NATIVE STANDARD 100 UG/ML IN METHANOL | |
|--|---|
| LC50 fish 1 | 15400 mg/l mortality LC50 - <i>Lepomis macrochirus</i> (Bluegill) - 96 h |
| EC50 Daphnia 1 | > 10000 mg/l Daphnia magna (Water flea) - 48 h |
| EC50 Daphnia 2 | 22000 mg/l Growth inhibition EC50 - <i>Scenedesmus capricornutum</i> (fresh water algae) - 96 h |
| NOEC (acute) | 7900 mg/l <i>Oryzias latipes</i> - 200 h |

| THIODIGLYCOL UNLABELED (111-48-8) | |
|-----------------------------------|---|
| LC50 fish 1 | > 10000 mg/l <i>Leuciscus idus</i> (Golden orfe) - 96 h |
| EC50 Daphnia 1 | > 500 mg/l Daphnia magna (Water flea) - 48 h |
| EC50 other aquatic organisms 1 | > 500 mg/l <i>Desmodesmus subspicatus</i> (<i>Scenedesmus subspicatus</i>) - 72 h |

| 1,4-DITHIANE UNLABELED (505-29-3) | |
|-----------------------------------|---|
| EC50 Daphnia 1 | 23.2 mg/l Daphnia magna (Water flea) - 24 h |

| 100% METHANOL UNLABELED (67-56-1) | |
|-----------------------------------|---|
| LC50 fish 1 | 15400 mg/l mortality LC50 - <i>Lepomis macrochirus</i> (Bluegill) - 96 h |
| EC50 Daphnia 1 | > 10000 mg/l Daphnia magna (Water flea) - 48 h |
| EC50 Daphnia 2 | 22000 mg/l Growth inhibition EC50 - <i>Scenedesmus capricornutum</i> (fresh water algae) - 96 h |
| NOEC (acute) | 7900 mg/l <i>Oryzias latipes</i> - 200 h |

12.2. Persistence and degradability

| HD METABOLITES NATIVE STANDARD 100 UG/ML IN METHANOL | |
|--|--|
| Biochemical oxygen demand (BOD) | 600 - 1200 mg/g |
| Chemical oxygen demand (COD) | 1420 mg/g |
| ThOD | 1500 mg/g |
| Biodegradation | 72 % - rapidly biodegradable aerobic - Exposure time 5 d |

| THIODIGLYCOL UNLABELED (111-48-8) | |
|-----------------------------------|-------------------------------------|
| Persistence and degradability | Aerobic - exposure time: 28 d. |
| Biochemical oxygen demand (BOD) | 105 g O ₂ /g substance |
| Chemical oxygen demand (COD) | 1.894 g O ₂ /g substance |
| BOD (% of ThOD) | < 30.0% - Not readily biodegradable |

| 100% METHANOL UNLABELED (67-56-1) | |
|-----------------------------------|--|
| Biochemical oxygen demand (BOD) | 600 - 1200 mg/g |
| Chemical oxygen demand (COD) | 1420 mg/g |
| ThOD | 1500 mg/g |
| Biodegradation | 72 % - rapidly biodegradable aerobic - Exposure time 5 d |

12.3. Bioaccumulative potential

| HD METABOLITES NATIVE STANDARD 100 UG/ML IN METHANOL | |
|--|--|
| BCF fish 1 | 5 mg/l <i>Cyprinus carpio</i> (Carp) - 72 d at 20 °C |

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| HD METABOLITES NATIVE STANDARD 100 UG/ML IN METHANOL | |
|--|---|
| Bioconcentration factor (BCF REACH) | 1 |
| Log Pow | -0.77 |
| THIODIGLYCOL UNLABELED (111-48-8) | |
| Log Pow | -0.75 |
| THIODIGLYCOL SULFOXIDE UNLABELED (3085-45-8) | |
| Log Pow | -1.699 |
| 100% METHANOL UNLABELED (67-56-1) | |
| BCF fish 1 | 5 mg/l Cyprinus carpio (Carp) - 72 d at 20 °C |
| Bioconcentration factor (BCF REACH) | 1 |
| Log Pow | -0.77 |

12.4. Mobility in soil

| HD METABOLITES NATIVE STANDARD 100 UG/ML IN METHANOL | |
|--|-----------------------------|
| Ecology - soil | Not degradable in the soil. |
| 100% METHANOL UNLABELED (67-56-1) | |
| Ecology - soil | Not degradable in the soil. |

12.5. Results of PBT and vPvB assessment

| HD METABOLITES NATIVE STANDARD 100 UG/ML IN METHANOL | |
|--|--|
| PBT: not relevant – no registration required | |
| 100% METHANOL UNLABELED (67-56-1) | |
| PBT: not relevant – no registration required | |

12.6. Other adverse effects

| | |
|-----------------------|--|
| Other adverse effects | : Avoid release to the environment. |
| Other information | : Stability in water: at 19 °C - (83 - 91%) - 72 h. Remarks: Hydrolyses on contact with water. Hydrolyses readily. |

SECTION 13: Disposal considerations

13.1. Waste treatment methods

| | |
|--|--|
| Regional legislation (waste) | : Waste materials should be disposed of under conditions which meet Federal, State, and local environmental control regulations. |
| Product/Packaging disposal recommendations | : Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. |
| Ecology - waste materials | : Dispose of as unused product. |

SECTION 14: Transport information

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

14.1. UN number

| | |
|-------------|--------|
| UN-No.(DOT) | : 1230 |
| DOT NA no. | UN1230 |

14.2. UN proper shipping name

| | |
|----------------------------|---|
| Proper Shipping Name (DOT) | : Methanol |
| Class (DOT) | : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120 |
| Hazard labels (DOT) | : 3 - Flammable liquid 6.1 - Poison |



| | |
|---------------------|---|
| DOT Symbols | : + - Fixes (cannot be altered) proper shipping name, hazard class, and packing group, I - Proper shipping name appropriate for international and domestic transportation |
| Packing group (DOT) | : II - Medium Danger |

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| | |
|---|---|
| DOT Special Provisions (49 CFR 172.102) | : IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized. T7 - 4 178.274(d)(2) Normal..... 178.275(d)(3) TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively. |
| DOT Packaging Exceptions (49 CFR 173.xxx) | : 150 |
| DOT Packaging Non Bulk (49 CFR 173.xxx) | : 202 |
| DOT Packaging Bulk (49 CFR 173.xxx) | : 242 |

14.3. Additional information

| | |
|---------------------------------------|---|
| Emergency Response Guide (ERG) Number | : 131 |
| Other information | : No supplementary information available. |

Overland transport

| | |
|---|---|
| Packing group (ADR) | : II |
| Class (ADR) | : 3 - Flammable liquid |
| Hazard identification number (Kemler No.) | : 336 |
| Classification code (ADR) | : FT1 |
| Hazard labels (ADR) | : 3 - Flammable liquids 6.1 - Toxic substances |



| | |
|---------------|---|
| Orange plates | : |
|---------------|---|

| | |
|-------------------------------|-------|
| Tunnel restriction code (ADR) | : D/E |
| Limited quantities (ADR) | : 1I |
| Excepted quantities (ADR) | : E2 |

Transport by sea

| | |
|-----------------------------|---|
| DOT Vessel Stowage Location | : B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded. |
| DOT Vessel Stowage Other | : 40 - Stow "clear of living quarters" |
| MFAG-No | : 131 |

Air transport

| | |
|--|---------------------|
| DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) | : 1 L |
| DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) | : 60 L |
| Civil Aeronautics Law | : Flammable liquids |

14.4. Environmental hazards

| | |
|-------------------|---|
| Other information | : No supplementary information available. |
|-------------------|---|

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14.5. Special precautions for user

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

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

| HD METABOLITES NATIVE STANDARD 100 UG/ML IN METHANOL | |
|---|---|
| Listed on the United States TSCA (Toxic Substances Control Act) inventory | |
| CERCLA RQ | 5000 lb |
| SARA Section 302 Threshold Planning Quantity (TPQ) | Not subject to reporting requirements of the United States SARA Section 302. |
| SARA Section 311/312 Hazard Classes | Fire hazard Immediate (acute) health hazard Delayed (chronic) health hazard |
| SARA Section 313 - Emission Reporting | Subject to reporting requirements of United States SARA Section 313 |
| 100% METHANOL UNLABELED (67-56-1) | |
| Listed on the United States TSCA (Toxic Substances Control Act) inventory | |
| CERCLA RQ | 5000 lb |
| SARA Section 302 Threshold Planning Quantity (TPQ) | Not subject to reporting requirements of the United States SARA Section 302. |
| SARA Section 311/312 Hazard Classes | Fire hazard Immediate (acute) health hazard Delayed (chronic) health hazard |
| SARA Section 313 - Emission Reporting | Subject to reporting requirements of United States SARA Section 313 |

15.2. International regulations

CANADA

| HD METABOLITES NATIVE STANDARD 100 UG/ML IN METHANOL | |
|---|--|
| Listed on the Canadian DSL (Domestic Substances List) | |
| 100% METHANOL UNLABELED (67-56-1) | |
| Listed on the Canadian DSL (Domestic Substances List) | |

15.2.1. National regulations

No additional information available

15.3. US State regulations

| HD METABOLITES NATIVE STANDARD 100 UG/ML IN METHANOL | | | | |
|---|--|---|---|----------------------------------|
| U.S. - California - Proposition 65 - Carcinogens List | No | | | |
| U.S. - California - Proposition 65 - Developmental Toxicity | Yes | | | |
| U.S. - California - Proposition 65 - Reproductive Toxicity - Female | No | | | |
| U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No | | | |
| State or local regulations | U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances | | | |
| 100% METHANOL UNLABELED (67-56-1) | | | | |
| U.S. - California - Proposition 65 - Carcinogens List | U.S. - California - Proposition 65 - Developmental Toxicity | U.S. - California - Proposition 65 - Reproductive Toxicity - Female | U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No significant risk level (NSRL) |
| No | Yes | No | No | |

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100% METHANOL UNLABELED (67-56-1)

State or local regulations

U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities
 U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations
 U.S. - Massachusetts - Right To Know List
 U.S. - Pennsylvania - RTK (Right to Know) List
 U.S. - New Jersey - Right to Know Hazardous Substance List
 U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances

SECTION 16: Other information

Other information : This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

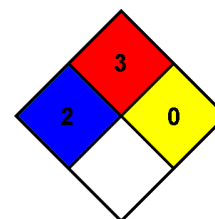
Full text of R-, H- and EUH-phrases:

| | |
|----------------------------------|--|
| Acute Tox. 3 (Dermal) | Acute toxicity (dermal) Category 3 |
| Acute Tox. 3 (Inhalation:vapour) | Acute toxicity (inhalation:vapour) Category 3 |
| Acute Tox. 3 (Oral) | Acute toxicity (oral) Category 3 |
| Acute Tox. 4 (Oral) | Acute toxicity (oral) Category 4 |
| Eye Irrit. 2 | Serious eye damage/eye irritation Category 2 |
| Flam. Liq. 2 | Flammable liquids Category 2 |
| Flam. Liq. 3 | Flammable liquids Category 3 |
| Resp. Sens. 1 | Respiratory sensitization, Category 1 |
| Skin Irrit. 2 | Skin corrosion/irritation Category 2 |
| STOT SE 1 | Specific target organ toxicity (single exposure) Category 1 |
| STOT SE 3 | Specific target organ toxicity (single exposure) Category 3 |
| H225 | Highly flammable liquid and vapour |
| H226 | Flammable liquid and vapour |
| H301 | Toxic if swallowed |
| H302 | Harmful if swallowed |
| H311 | Toxic in contact with skin |
| H315 | Causes skin irritation |
| H319 | Causes serious eye irritation |
| H331 | Toxic if inhaled |
| H334 | May cause an allergy or asthma symptoms or breathing difficulties if inhaled |
| H335 | May cause respiratory irritation |
| H370 | Causes damage to organs |
| R10 | Flammable |
| R11 | Highly flammable |
| R23/24/25 | Toxic by inhalation, in contact with skin and if swallowed |
| R36 | Irritating to eyes |
| R36/37/38 | Irritating to eyes, respiratory system and skin |
| R36/38 | Irritating to eyes and skin |
| R39/23/24/25 | Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed |
| R42 | May cause sensitization by inhalation |
| R68/20/21/22 | Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed |
| F | Highly flammable |
| T | Toxic |
| Xi | Irritant |
| Xn | Harmful |

NFPA health hazard : 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

NFPA fire hazard : 3 - Liquids and solids (including finely divided suspended solids) that can be ignited under almost all ambient temperature conditions.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



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Hazard Rating

| | |
|--------------|---|
| Health | : 2 Moderate Hazard - Temporary or minor injury may occur |
| Flammability | : 3 Serious Hazard |
| Physical | : 0 Minimal Hazard |

CIL Mixture SDS

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