SAFETY DATA SHEET

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

1.1. Product identifier
Trade name or designation of the mixture
Vilsmeier Reagent
Registration number
01-0000017237-70-0002
Synonyms
Amide Chloride; N,N-Dimethylchloromethyliminium Chloride
Issue date
07-August-2015
Version number
01
Revision date
-
Supersedes date
-

1.2. Relevant identified uses of the substance or mixture and uses advised against
Identified uses
Chemical intermediate.
Uses advised against
None known.

1.3. Details of the supplier of the safety data sheet
Supplier
VanDeMark Chemical B.V.
Address
Schiekade 830, 3032 AL Rotterdam, The Netherlands
e-mail
sales@vdmchemical.com
Manufacturer
VanDeMark Chemical Inc.
Address
1 North Transit Road, Lockport, NY 14094 USA
Telephone
+1 716-433-6764
e-mail
sales@vdmchemical.com

1.4. Emergency telephone number
CHEMTREC +1-703-527-3887 (International)
Europe
112
Denmark
Poison Control Hotline (DK): +45 82 12 12 12
France
ORFILA (FR): + 01 45 42 59 5
Germany
Poison Center Berlin (DE): +49 030 30686 790
Italy
Poison Center, Milan (IT): +39 02 6610 1029
Spain
Servicio de Información Toxicológica: +34 91 562 04 20
Switzerland
Poison Center: Tel 145; +41 44 251 51 51

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended

Health hazards
- Acute toxicity, oral
  Category 4
- Skin corrosion/irritation
  Category 1A
- Serious eye damage/eye irritation
  Category 1
- Reproductive toxicity
  Category 1B

Hazard summary
Harmful if swallowed. Causes severe skin burns and eye damage. May damage the unborn child.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended
Contains:
N,N-Dimethylchloromethyliminium chloride, N,N-Dimethylformamide

Hazard pictograms
Signal word: Danger

Hazard statements:
- H302: Harmful if swallowed.
- H314: Causes severe skin burns and eye damage.
- H360D: May damage the unborn child.

Precautionary statements:

Prevention:
- P201: Obtain special instructions before use.
- P202: Do not handle until all safety precautions have been read and understood.
- P260: Do not breathe dust.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.
- P264: Wash thoroughly after handling.
- P270: Do not eat, drink or smoke when using this product.

Response:
- P308 + P313: IF exposed or concerned: Get medical advice/attention.
- P301 + P330 + P331: IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
- P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position 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.
- P303 + P361 + P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P310: Immediately call a POISON CENTRE or doctor/physician.
- P363: Wash contaminated clothing before reuse.

Storage:
- P405: Store locked up.

Disposal:
- P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental label information:
- Reacts violently with water.

2.3. Other hazards:
- Not a PBT or vPvB substance or mixture.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

General information:

List of abbreviations and symbols that may be used above:
#: This substance has been assigned Community workplace exposure limit(s).

Composition comments:
The full text for all H-statements is displayed in section 16. All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4: First aid measures

General information:
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

4.1. Description of first aid measures

Inhalation:
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention immediately!

Skin contact:
Take off immediately all contaminated clothing. Immediately flush skin with plenty of water. Get medical attention immediately. For minor skin contact, avoid spreading material on unaffected skin. Get medical attention if irritation develops or persists.
Chemical burns must be treated by a physician.
**Eye contact**
Do not rub eye. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

**Ingestion**
Immediately rinse mouth and drink plenty of water or milk. Keep person under observation. Do not induce vomiting. If vomiting occurs, keep head low. Transport immediately to hospital and take these instructions.

**4.2. Most important symptoms and effects, both acute and delayed**
Eye contact: Prolonged contact causes serious eye and tissue damage. Skin contact: Burning pain and severe corrosive skin damage. Inhalation: Aspiration may cause pulmonary oedema and pneumonitis. Ingestion: Can burn mouth, throat, and stomach.

**4.3. Indication of any immediate medical attention and special treatment needed**
Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Symptoms may be delayed. Keep victim under observation. Treat symptomatically.

**SECTION 5: Firefighting measures**
**General fire hazards**
The product is non-combustible. Will burn if involved in a fire. Decomposes at elevated temperatures. Contact with certain metals liberates flammable gas. Containers may explode when heated.

**5.1. Extinguishing media**
- **Suitable extinguishing media**
  - Carbon dioxide (CO2). Dry powder. Dry chemicals.

- **Unsuitable extinguishing media**
  - Water or Foam.

**5.2. Special hazards arising from the substance or mixture**
During fire, gases hazardous to health may be formed.

**5.3. Advice for firefighters**
Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.

**SECTION 6: Accidental release measures**
**6.1. Personal precautions, protective equipment and emergency procedures**
- **For non-emergency personnel**
  - Ensure adequate ventilation. Avoid contact with eyes, skin, and clothing. Do not touch or walk through spilled material. Keep people away from and upwind of spill/leak. Wear appropriate personal protective equipment. Do not breathe dust.

- **For emergency responders**
  - Keep unnecessary personnel away.

**6.2. Environmental precautions**
Prevent entry into waterways, sewer, basements or confined areas.

**6.3. Methods and material for containment and cleaning up**
Use explosion-proof electrical equipment if airborne dust levels are high. Cover powder spill with plastic sheet or tarp to minimise spreading. DO NOT USE WATER. Sweep up and place into a proper container for disposal. Minimise dust generation and accumulation. Clean contaminated surface thoroughly.

**6.4. Reference to other sections**
For personal protection, see Section 8 of the SDS. For waste disposal, see Section 13 of the SDS.

**SECTION 7: Handling and storage**
**7.1. Precautions for safe handling**
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Should be handled in closed systems, if possible. In case of inadequate ventilation, use respiratory protection. Do not breathe dust. Avoid contact with skin, eyes and clothing. Wear appropriate personal protective equipment (See Section 8). Immediately change contaminated clothes. Isolate contaminated clothing and wash before reuse. Do not eat, drink or smoke when using the product. Avoid dust formation. Material may react violently with water. Observe good industrial hygiene practices.

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

**7.3. Specific end use(s)**
Chemical intermediate.

**SECTION 8: Exposure controls/personal protection**
**8.1. Control parameters**
### Occupational exposure limits

#### UK. EH40 Workplace Exposure Limits (WELs)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>N,N-Dimethylformamide (CAS 68-12-2)</td>
<td>STEL</td>
<td>30 mg/m³</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>10 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 ppm</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
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<th>Type</th>
<th>Value</th>
</tr>
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<td></td>
<td>TWA</td>
<td>10 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 ppm</td>
</tr>
</tbody>
</table>

No biological exposure limits noted for the ingredient(s).

#### Biological limit values

Follow standard monitoring procedures.

#### Recommended monitoring procedures

**Derived no-effect level (DNEL)**

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Route</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>N,N-Dimethylformamide (CAS 68-12-2)</td>
<td>Workers</td>
<td>Dermal</td>
<td>5900 µg/cm²</td>
<td>Acute exposure local effects</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dermal</td>
<td>446 µg/cm²</td>
<td>Long term exposure local effects</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dermal</td>
<td>3.31 mg/kg/day</td>
<td>Long term exposure systemic effects</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dermal</td>
<td>26.3 mg/kg/day</td>
<td>Acute exposure systemic effects</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inhalation</td>
<td>30 mg/m³</td>
<td>Acute exposure local effects</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inhalation</td>
<td>30 mg/m³</td>
<td>Acute exposure systemic effects</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inhalation</td>
<td>15 mg/m³</td>
<td>Long term exposure local effects</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inhalation</td>
<td>15 mg/m³</td>
<td>Long term exposure systemic effects</td>
</tr>
</tbody>
</table>

**Predicted no effect concentrations (PNECs)**

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Route</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>N,N-Dimethylformamide (CAS 68-12-2)</td>
<td>Aqua (freshwater)</td>
<td>Not applicable</td>
<td>30 mg/l</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Aqua (intermittent releases)</td>
<td>Not applicable</td>
<td>30 mg/l</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Aqua (marine water)</td>
<td>Not applicable</td>
<td>3 mg/l</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sediment (freshwater)</td>
<td>Not applicable</td>
<td>25.05 mg/kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sewage Treatment Plant</td>
<td>Not applicable</td>
<td>123 mg/l</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>Not applicable</td>
<td>16.235 mg/kg</td>
<td></td>
</tr>
</tbody>
</table>

#### Exposure guidelines

**UK EH40 WEL: Skin designation**

N,N-Dimethylformamide (CAS 68-12-2) Can be absorbed through the skin.

8.2. Exposure controls

**Appropriate engineering controls**

Use explosion-proof electrical equipment if airborne dust levels are high. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Observe occupational exposure limits and minimise the risk of inhalation of dust. Provide easy access to water supply and eye wash facilities.

**Individual protection measures, such as personal protective equipment**

**General information**

Personal protective equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

**Eye/face protection**

Use chemical goggles / face shield. Eye wash station should be located in immediate work area.
- **Hand protection**

Chemical resistant protective gloves consistent with Standard EN 374 Suitable materials with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374):

- Neoprene rubber - 0.6 mm coating thickness.
- Neoprene - 0.6 mm coating thickness.

Notice: The selection of a specific glove for an application and duration of use in a workplace should also take in to account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection) potential body reactions to the glove material as well as instructions/specifications provided by the glove manufacturer.

- **Other**

Selection of specific items such as face shield, boots, apron, or full body suit will depend on task and potential for exposure. Polyethylene coatings of 10 mls provide a barrier for splash protection. Safety shower should be located in the immediate work area. Remove contaminated clothing immediately, wash skin area with soap and water. Launder clothing before reuse.

**Respiratory protection**

Respiratory protections should be worn when there is a potential to exceed the exposure limit requirements or guidelines. Material readily decomposes to create hydrochloric acid and dimethyl formamide in the presences of atmospheric moisture. When respiratory protection is required, use a full face model with approved cartridge for organic vapors/acid gases with particulate filtration properties (ABEK2-P2 for concentration up to 5,000 ppm, air powered ABEK3-P3 for concentration up to 10,000 ppm). In higher concentrations or in case of insufficient data on concentration wear a positive-pressure supplied-air respirator.

**Thermal hazards**

When material is heated, wear gloves to protect against thermal burns.

**Hygiene measures**

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Observe any medical surveillance requirements.

**Environmental exposure controls**

Environmental manager must be informed of all major spillages.

### SECTION 9: Physical and chemical properties

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td>Crystalline.</td>
</tr>
<tr>
<td><strong>Physical state</strong></td>
<td>Solid.</td>
</tr>
<tr>
<td><strong>Form</strong></td>
<td>Solid.</td>
</tr>
<tr>
<td><strong>Colour</strong></td>
<td>White.</td>
</tr>
<tr>
<td><strong>Odour</strong></td>
<td>Acrid. Ammoniacal.</td>
</tr>
<tr>
<td><strong>Odour threshold</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Melting point/freezing point</strong></td>
<td>139 - 141 °C (282.2 - 285.8 °F)</td>
</tr>
<tr>
<td><strong>Initial boiling point and boiling range</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>&gt; 93.0 °C (&gt; 199.4 °F)</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>Non combustible.</td>
</tr>
<tr>
<td><strong>Upper/lower flammability or explosive limits</strong></td>
<td></td>
</tr>
<tr>
<td>Flammability limit - lower (%)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flammability limit - upper (%)</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Vapour pressure</strong></td>
<td>1 hPa (20 °C)</td>
</tr>
<tr>
<td><strong>Vapour density</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td>0.756</td>
</tr>
<tr>
<td><strong>Solubility(ies)</strong></td>
<td>Reacts with water.</td>
</tr>
<tr>
<td><strong>Partition coefficient (n-octanol/water)</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Auto-ignition temperature</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Decomposition temperature</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Explosive properties</strong></td>
<td>Not explosive.</td>
</tr>
<tr>
<td><strong>Oxidizing properties</strong></td>
<td>Not oxidising.</td>
</tr>
</tbody>
</table>
9.2. Other information

Solubility (other) Soluble in chloroform.

VOC (Weight %) 5%

SECTION 10: Stability and reactivity

10.1. Reactivity Reacts violently with water.

10.2. Chemical stability Stable under normal temperature conditions and recommended use.

10.3. Possibility of hazardous reactions Hazardous polymerisation does not occur.

10.4. Conditions to avoid Heat, flames and sparks. The product is hygroscopic and will absorb water by contact with the moisture in the air.


SECTION 11: Toxicological information

General information Occupational exposure to the substance or mixture may cause adverse effects.

Information on likely routes of exposure

Inhalation Causes respiratory tract burns.

Skin contact Causes severe skin burns.

Eye contact Causes serious eye damage.

Ingestion Causes digestive tract burns.

Symptoms Eye contact: Prolonged contact causes serious eye and tissue damage. Skin contact: Burning pain and severe corrosive skin damage. Inhalation: Aspiration may cause pulmonary oedema and pneumonitis. Ingestion: Can burn mouth, throat, and stomach.

11.1. Information on toxicological effects

Acute toxicity Harmful if swallowed.

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vilsmeier Reagent (CAS Mixture)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>&gt; 2000 mg/kg</td>
</tr>
<tr>
<td>Oral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>200 - 466 mg/kg</td>
</tr>
<tr>
<td>Components</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Species</td>
<td></td>
<td>Test results</td>
</tr>
</tbody>
</table>

| N,N-Dimethylformamide (CAS 68-12-2) |         |                       |
| Acute   |         |                       |
| Dermal  |         |                       |
| LD50    | Rabbit  | 1500 mg/kg            |
| Inhalation |       |                       |
| LC50    | Rat     | 9 - 15 mg/l           |
| Oral    |         |                       |
| LD50    | Rat     | 2800 mg/kg            |

Skin corrosion/irritation Causes severe skin burns.

Serious eye damage/eye irritation Causes serious eye damage.

Respiratory sensitisation Due to lack of data the classification is not possible.

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

IARC Monographs. Overall Evaluation of Carcinogenicity

N,N-Dimethylformamide (CAS 68-12-2) 3 Not classifiable as to carcinogenicity to humans.

Reproductive toxicity May damage the unborn child.

Specific target organ toxicity - single exposure Due to lack of data the classification is not possible.
Specific target organ toxicity - repeated exposure
Based on available data, the classification criteria are not met.

Aspiration hazard
No data available.

Mixture versus substance information
Not available.

Other information
No data available.

SECTION 12: Ecological information

12.1. Toxicity
The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

12.2. Persistence and degradability
N,N-Dimethylformamide: BOD5 = 0.9 mg.

12.3. Bioaccumulative potential
The product is not bioaccumulating. N,N-Dimethylformamide: BCF 0.3-1.2 (fish, 56 days @ 25 °C).

Partition coefficient
n-octanol/water (log Kow)
N,N-Dimethylformamide (CAS 68-12-2) -1.01

Bioconcentration factor (BCF)
Not available.

12.4. Mobility in soil
Water reactive material.

Mobility in general
Reacts with water and forms dimethylformamide and hydrochloric acid.

12.5. Results of PBT and vPvB assessment
Not a PBT or vPvB substance or mixture.

12.6. Other adverse effects
None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Residual waste
Dispose of in accordance with local regulations. Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

Contaminated packaging
Since emptied containers retain product residue, follow label warnings even after container is emptied.

EU waste code
16 05 06*
The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

SECTION 14: Transport information

ADR
14.1. UN number
UN2923

14.2. UN proper shipping name
CORROSIVE SOLID, TOXIC, N.O.S. (N,N-Dimethylchloromethyliminium chloride)

14.3. Transport hazard class(es)
Class 8
Subsidiary risk 6.1
Label(s) 8
+6.1
Hazard No. (ADR) 86
Tunnel restriction code E

14.4. Packing group
II

14.5. Environmental hazards
No.

14.6. Special precautions for user
Read safety instructions, SDS and emergency procedures before handling.

RID
14.1. UN number
UN2923

14.2. UN proper shipping name
Corrosive solid, toxic, n.o.s. (N,N-Dimethylchloromethyliminium chloride)

14.3. Transport hazard class(es)
Class 8
Subsidiary risk 6.1
Label(s) 8+6.1

14.4. Packing group
II

14.5. Environmental hazards
No.

14.6. Special precautions for user
Read safety instructions, SDS and emergency procedures before handling.
14.1. UN number
UN2923

14.2. UN proper shipping name
Corrosive solid, n.o.s. (N,N-Dimethylchloromethyliminium chloride)

14.3. Transport hazard class(es)
Class 8
Subsidiary risk 6.1
Label(s) 8+6.1

14.4. Packing group
II

14.5. Environmental hazards
No.

14.6. Special precautions for user
Read safety instructions, SDS and emergency procedures before handling.

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

EU regulations

- Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended
  Not listed.
  Not listed.
- Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1 as amended
  Not listed.
- Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2 as amended
  Not listed.
- Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3 as amended
  Not listed.
- Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V as amended
  Not listed.
  Not listed.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable. This product is a solid. Therefore, bulk transport is governed by IMSBC code.

SECTION 15: Regulatory information
Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA
N,N-Dimethylformamide (CAS 68-12-2)

Authorisations
Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended
Not listed.

Restrictions on use
Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended
N,N-Dimethylchloromethyliminium chloride (CAS 3724-43-4)
N,N-Dimethylformamide (CAS 68-12-2)

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended
Not listed.

Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding, as amended
N,N-Dimethylchloromethyliminium chloride (CAS 3724-43-4)
N,N-Dimethylformamide (CAS 68-12-2)

Other EU regulations
Directive 2012/18/EU on major accident hazards involving dangerous substances
N,N-Dimethylchloromethyliminium chloride (CAS 3724-43-4)

Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work
N,N-Dimethylchloromethyliminium chloride (CAS 3724-43-4)
N,N-Dimethylformamide (CAS 68-12-2)

Directive 94/33/EC on the protection of young people at work
N,N-Dimethylchloromethyliminium chloride (CAS 3724-43-4)
N,N-Dimethylformamide (CAS 68-12-2)

Other regulations
Pregnant women should not work with the product, if there is the least risk of exposure. Young people under 18 years old are not allowed to work with this product according to the EU Directive 94/33/EC on the protection of young people at work. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006 as amended.

National regulations
Follow national regulation for work with chemical agents.

15.2. Chemical safety assessment
No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations
DNEL: Derived No-Effect Level.
PNEC: Predicted No-Effect Concentration.
PBT: Persistent, bioaccumulative and toxic.
vPvB: Very Persistent and very Bioaccumulative.
LD50: Lethal Dose, 50%.
LC50: Lethal Concentration, 50%.

References
ESIS (European chemical Substances Information System)
HSDB® - Hazardous Substances Data Bank
International Chemical Safety Cards (ICSC)
GESTIS Substance Database

Information on evaluation method leading to the classification of mixture
The mixture is classified based on test data for physical hazards. The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available. For details, refer to Sections 9, 11 and 12.

Full text of any H-statements not written out in full under Sections 2 to 15
H226 Flammable liquid and vapour.
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H360D May damage the unborn child.

Training information
Follow training instructions when handling this material.

Disclaimer
This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.