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

1.1. Product identifier
NMR-SAMPLE  90% Formamid in DMSO-d6 (SENSITIVITY 15N)

Further trade names
Z10039, Z10187, Z10188
Z10136, Z10256, Z10189, Z10190

1.2. Relevant identified uses of the substance or mixture and uses advised against
Use of the substance/mixture
For R&D use only.

Uses advised against
Not for drug, household or other uses.

1.3. Details of the supplier of the safety data sheet
Company name: Bruker BioSpin AG
Street: Industriestrasse 26
Place: CH-8117 Fällanden
Telephone: +41 44 825 9111 / 9622
Telefax: +41 44 825 96 96
Internet: www.bruker.com
Responsible Department: Responsible for the safety data sheet: sds@gbk-ingelheim.de
(001) 352 323 3500 - Transport, EMTEL ID: 94135

1.4. Emergency telephone number:
Emergency telephone :+49 (0) 6132 / 84463 (GBK GmbH, Ingelheim)
+41 44 251 51 51 - Swiss Toxicological Information Center (24 h)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture according to 1272/2008/EC
Hazard categories:
Carcinogenicity: Carc. 2
Reproductive toxicity: Repr. 1B
Specific target organ toxicity - repeated exposure: STOT RE 2

Hazard Statements:
Suspected of causing cancer.
May damage the unborn child.
May cause damage to organs through prolonged or repeated exposure.

2.2. Label elements

Hazard components for labelling
formamide
Signal word:
Danger

Pictograms:

Hazard statements
H351  Suspected of causing cancer.
H360D  May damage the unborn child.
H373  May cause damage to organs through prolonged or repeated exposure.

Precautionary statements
P201  Obtain special instructions before use.
P202  Do not handle until all safety precautions have been read and understood.
P260  Do not breathe dust/fume/gas/mist/vapours/spray.
P308+P313  IF exposed or concerned: Get medical advice/attention.
P405  Store locked up.
2.3. Other hazards
Not known.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization
CPID 259572-01
The product contains: 10 % Dimethylsulfoxide-d6, CAS-No. 2206-27-1

Hazardous components

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Index No</th>
<th>REACH No</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-12-7</td>
<td>formamide</td>
<td>200-842-0</td>
<td>616-052-00-8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>01-2119496064-35</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>EC No</th>
<th>Index No</th>
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</tr>
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<td>75-12-7 formamide</td>
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<td></td>
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<td>01-2119496064-35</td>
</tr>
</tbody>
</table>

Carc. 2, Repr. 1B, STOT RE 2; H351 H360D H373

Full text of H and EUH statements: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information
Suspected of causing cancer. May cause harm to the unborn child. May cause damage to organs through prolonged or repeated exposure.
Ensure adequate ventilation. If patient is not breathing, apply artificial respiration. Do not breathe vapour.

After inhalation
Take affected person into fresh air. If patient is not breathing, apply artificial respiration. Seek medical treatment immediately.

After contact with skin
Wash off immediately with plenty of water for at least 15 minutes. Remove contaminated clothing immediately and dispose of safely. Seek medical treatment immediately.

After contact with eyes
Rinse immediately with plenty of water, also under the eyelids. If eye irritation persists consult a physician.

After ingestion
Do not induce vomiting. Attention, beware danger of aspiration. Rinse out mouth and give plenty of water to drink. Seek medical treatment immediately.

4.2. Most important symptoms and effects, both acute and delayed
Suspected of causing cancer. May cause harm to the unborn child. May cause damage to organs through prolonged or repeated exposure.

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

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media
Foam, carbon dioxide (CO2), dry chemical, water-spray

Unsuitable extinguishing media
No data available.

5.2. Special hazards arising from the substance or mixture
Burning may release the following flue gases such as: Hydrogen cyanide, carbon monoxide (CO), carbon dioxide (CO2), sulfur oxides (SOx), nitrous oxides (NOx), formaldehyde, methyl mercaptan, dimethyl sulfide.

5.3. Advice for firefighters
In case of fire, wear suitable respiratory equipment with positive air supply. Use personal protective clothing.
Additional information
Vapours are heavier than air. Formation of explosive mixtures with air. Closed NMR sample tubes may rupture when heated and may cause severe injury of eyes and skin. Collect contaminated firefighting water separately, must not be discharged into the drains.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
The appropriate action is to be taken immediately if the product is spilled or leaks. Take affected person away from danger area. Ensure adequate ventilation. Avoid contact with the skin and the eyes. Do not breathe vapour. Wear self-contained breathing apparatus and protective suit.

6.2. Environmental precautions
Do not discharge into the drains/surface waters/ground water. Inform competent authority about release into the sewage, ground or into waters.

6.3. Methods and material for containment and cleaning up
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder). Shovel into suitable container for disposal. Ensure adequate ventilation.

6.4. Reference to other sections
Information for disposal see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Advice on safe handling
Handling should only be allowed by trained personnel.

Further information on handling
Do not open the glass tube. Avoid contact with skin, eyes and clothing. Use only in a chemical fume hood. Do not breathe vapour. Heating will cause pressure rise with risk of bursting. See also chapter: 10

7.2. Conditions for safe storage, including any incompatibilities
Requirements for storage rooms and vessels
To be kept tightly closed, in a cool and dry place.

Advice on storage compatibility
Store separately from other hazardous and incompatible substances. See also chapter: 10

7.3. Specific end use(s)
NMR Sample

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
Exposure limits (EH40)

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Substance</th>
<th>ppm</th>
<th>mg/m³</th>
<th>fibres/ml</th>
<th>Category</th>
<th>Origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-12-7</td>
<td>Formamide</td>
<td>20</td>
<td>37</td>
<td></td>
<td>TWA (8 h)</td>
<td>WEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>30</td>
<td>56</td>
<td></td>
<td>STEL (15 min)</td>
<td>WEL</td>
</tr>
</tbody>
</table>

8.2. Exposure controls

Appropriate engineering controls
Ensure adequate ventilation, especially in confined areas. Use only in a chemical fume hood.

Protective and hygiene measures
Take the usual precautions when handling with chemicals.
Wash hands before breaks and at the end of workday. When using do not eat, drink or smoke. Avoid contact with skin, eyes and clothing. Do not breathe vapour. If you feel unwell, seek medical advice.
Workers should be trained on good working practices and informed on applicable local regulations.

**Eye/face protection**
In case of eye contact wear safety goggles or face protection (EN 166).
Eye wash bottle with pure water (EN 15154).

**Hand protection**
Chemical-resistant gloves (EN 374). Rubber, natural, Nitrile rubber (recommended: minimum protection index 2, corresponding to a permeation rate > 30 minutes according to EN 374).
Follow the recommendations of the glove manufacturer for breakthrough properties especially for workplace conditions involving mechanical stress and contact duration.

**Skin protection**
Protective clothing

**Respiratory protection**
In case of vapour / mist formation use respirator.

**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>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>Colourless, clear</td>
</tr>
<tr>
<td>Odour</td>
<td>Odourless</td>
</tr>
<tr>
<td>pH-Value</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

**Changes in the physical state**

- Melting point: (formamide) 2 - 3 °C
- Initial boiling point and boiling range: (formamide) 210 °C
- Flash point: (formamide) 156.7 °C
- Ignition temperature: n.a.
- Vapour pressure: (formamide) 0,08 hPa
- Density (at 25 °C): (formamide) 1,134 g/cm³
- Water solubility: (formamide) Completely miscible
- Viscosity / dynamic: n.a.

9.2. Other information
No data available.

**SECTION 10: Stability and reactivity**

10.1. Reactivity
No data available.

10.2. Chemical stability
Stable under normal conditions.

10.3. Possibility of hazardous reactions
No data available.

10.4. Conditions to avoid
To avoid thermal decomposition, do not overheat.

10.5. Incompatible materials
Strong oxidizing agents, strong acids and strong bases, halogen compounds, hydrides, fluorination compounds.

10.6. Hazardous decomposition products
carbon monoxide (CO), carbon dioxide (CO2), sulfur oxides (SOx), nitrous oxides (NOx), formaldehyde, methyl mercaptan, dimethyl sulfide.

**SECTION 11: Toxicological information**

11.1. Information on toxicological effects
Acute toxicity
Based on available data, the classification criteria are not met.

Irritation and corrosivity
Based on available data, the classification criteria are not met.
Contact with skin may cause irritation. Contact with eyes may cause irritation.

Sensitising effects
Based on available data, the classification criteria are not met.

STOT-single exposure
Based on available data, the classification criteria are not met.

Severe effects after repeated or prolonged exposure
May cause damage to organs through prolonged or repeated exposure. (formamide)

Carcinogenic/mutagenic/toxic effects for reproduction
Suspected of causing cancer. (formamide)
May damage the unborn child. (formamide)

SECTION 12: Ecological information

12.1. Toxicity
The product has not been tested. The information is derived from the properties of the individual components.

12.2. Persistence and degradability
No data available.

12.3. Bioaccumulative potential
There is no indication of bioaccumulation potential.

12.4. Mobility in soil
No data available.

12.5. Results of PBT and vPvB assessment
Not determined.

12.6. Other adverse effects
No data available.

Further information
Do not flush into surface water or sanitary sewer system.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Advice on disposal
Do not flush into surface water or sanitary sewer system. This product is to be brought to a properly certified waste site approved to handle energy wastes.

Waste disposal number of waste from residues/unused products
160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals
Classified as hazardous waste.

Waste disposal number of contaminated packaging
150107 WASTE PACKAGING; ABSORBENTS, WIPIING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); glass packaging

Contaminated packaging
Disposal in accordance with local regulations.

SECTION 14: Transport information

Land transport (ADR/RID); Marine transport (IMDG); Air transport (ICAO); Inland waterways transport (ADN):
14.1. UN number:
Not applicable. No hazardous material as defined by the transport regulations.

14.2. UN proper shipping name:
Not applicable. No hazardous material as defined by the transport regulations.

14.3. Transport hazard class(es):
Not applicable. No hazardous material as defined by the transport regulations.

14.4. Packing group:
Not applicable. No hazardous material as defined by the transport regulations.

14.5. Environmental hazards
Not applicable. No hazardous material as defined by the transport regulations.

14.6. Special precautions for user
Not applicable. No hazardous material as defined by the transport regulations.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
Not applicable. No hazardous material as defined by the transport regulations.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
EU regulatory information
Additional information
The product is labeled in accordance with Regulation (EC) no. 1272/2008 (GHS).

National regulatory information
Employment restrictions: Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers. Observe employment restrictions for women of child-bearing age.

15.2. Chemical safety assessment
For this substance a chemical safety assessment has not been carried out.

SECTION 16: Other information

Changes
Section: 2, 4, 8, 13, 14, 15.

Abbreviations and acronyms
ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses
ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure
IMDG = International Maritime Code for Dangerous Goods
IATA/ICAO = International Air Transport Association / International Civil Aviation Organization
MARPOL = International Convention for the Prevention of Pollution from Ships
IBC-Code = International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
REACH = Registration, Evaluation, Authorization and Restriction of Chemicals
CAS = Chemical Abstract Service
EN = European norm
ISO = International Organization for Standardization
DIN = Deutsche Industrie Norm
PBT = Persistent Bioaccumulative and Toxic
vPvB = Very Persistent and very Bio-accumulative
LD = Lethal dose
LC = Lethal concentration
EC = Effect concentration
IC = Median immobilisation concentration or median inhibitory concentration

Relevant H and EUH statements (number and full text)
H351 Suspected of causing cancer.
H360D  May damage the unborn child.

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

Further Information
Data of items 4 to 8, as well as 10 to 12, do partly not refer to the use and the regular employing of the product (in this sense consult information on use and on product), but to liberation of major amounts in case of accidents and irregularities.
The information describes exclusively the safety requirements for the product(s) and is based on the present level of our knowledge.
The delivery specifications are contained in the corresponding product sheet.
This data does not constitute a guarantee for the characteristics of the product(s) as defined by the legal warranty regulations.
(n.a. = not applicable; n.d. = not determined)

(Information about the composition are based on information from the sub-contractor)

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)