1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifiers

Product Name: Human CCL4/MIP-1 beta Quantikine Kit
Catalog Number: DMB00
Components: Microplate
Conjugate (contains Proclin 300 Mixture)
Standard (contains Sodium Azide)
Assay Diluent (contains Proclin 300 Mixture)
Calibrator Diluent (contains Proclin 300 Mixture and Sodium Azide)
Wash Buffer Concentrate (contains Proclin 300 Mixture)
Color Reagent A
Color Reagent B (contains N,N-Dimethylformamide and Tetramethylbenzidine)
Stop Solution (contains Sulfuric Acid)

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

Identified Uses: For research use only

1.3 Details of the supplier of the safety data sheet

Company: R&D Systems, Inc. a Bio-Techne Brand
614 McNitely Place NE
Minneapolis, MN 55413, USA
Telephone: 1-800-343-7475
Fax: 1-612-656-4400
Internet: www.rndsystems.com
Email address: info@bio-techne.com

Canada:
461 North Service Rd West
Unit B37
Oakville, ON L6M 2V5
Telephone: 1-855-668-8722
Fax: 902-827-6402
Email address: Canada.inquiries@bio-techne.com

United Kingdom:
19 Barton Lane
Abingdon Science Park
Abingdon, OX14 3NB
Telephone: 44 (0)1235 529449
Fax: 44 (0)1235 533420
Email address: info.emea@bio-techne.com

China:
1193 Changning Road
Unit 1901, Raffles Changning Office
Shanghai, China
Telephone: 86-400-821-3475
Fax: 76 (021)52371001
Email address: techsupport.cn@bio-techne.com

1.4 Emergency Telephone Number

Emergency Tel: For chemical emergency, spill, leak, fire, exposure, or accident call CHEMTREC day or night: Within U.S. 1-800-262-8200 Worldwide 1-703-741-5500
Bio-Techne Tel: US: 612-379-2956 or 800-343-7475 / Europe: +44(0)1235-529449 / China 86-400-821-3475

2. HAZARDS IDENTIFICATION

See additional safety data sheets.
1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifiers

Product Name: Conjugate (contains Proclin 300 Mixture)

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

Identified Uses: For research use only.

1.3 Details of the supplier of the safety data sheet

Company: R&D Systems, Inc. a Bio-Techne Brand
614 McKinley Place NE
Minneapolis, MN 55413, USA

Telephone: 1-800-343-7475
Fax: 1-612-656-4400
Internet: www.rndsystems.com
Email address: info@bio-techne.com

Canada: 461 North Service Rd West
Unit B37
Oakville, ON L6M 2V5

Telephone: 1-855-668-8722
Fax: 902-827-6402
Email address: Canada.inquiries@bio-techne.com

United Kingdom: 19 Barton Lane
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Telephone: 44 (0)1235 529449
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Email address: info.emea@bio-techne.com

China: 1193 Changning Road
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Bio-Techne Tel: US: 612-379-2956 or 800-343-7475 / Europe: +44(0)1235-529449 / China 86-400-821-3475

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture


Sensitization, skin - Category 1

2.2 Label Elements

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

Pictogram(s):

Signal Word: Warning

Hazard Statement(s):

H317 May cause an allergic skin reaction.

Precautionary Statement(s):

P261 Avoid breathing dust/fumes/gas/mist/vapors/spray.
P272 Contaminated work clothing should not be allowed out of the workplace.
P380 Wear protective gloves/protective clothing/eye protection/face protection.
P302+352 IF ON SKIN: Wash with plenty of soap and water.
P333+313 If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.

2.3 Other Hazards - None

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable.

3.2 Mixtures

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No.</th>
<th>EC No.</th>
<th>Index No.</th>
<th>Classification</th>
<th>Conc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proclin 300 Mixture &lt;0.1% (active 96118-96-6 ingredients)</td>
<td></td>
<td></td>
<td></td>
<td>H317</td>
<td></td>
</tr>
</tbody>
</table>
4. FIRST AID MEASURES

4.1 Description of first aid measures

General Advice
Consult a doctor and show this safety data sheet.

If Inhaled
Remove to fresh air and monitor breathing. If breathing becomes difficult, give oxygen. If breathing stops, give artificial respiration. Consult a doctor.

In Case of Skin Contact
Immediately wash skin with copious amounts of soap and water for at least 15 minutes. Remove contaminated clothing and shoes and wash before reuse. Consult a doctor.

In Case of Eye Contact
Flush with copious amounts of water for at least 15 minutes. Consult a doctor.

If Swallowed
Rinse mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Consult a doctor.

4.2 Most important symptoms and effects, both acute and delayed
To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

4.3 Indication of immediate medical attention and special treatment needed
Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing Media
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
In combustion, may emit toxic fumes.

5.3 Precautions for fire-fighters
Wear suitable protective clothing to prevent contact with skin and eyes and self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Do not take action without suitable protective clothing - see section 8 of SDS. Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid breathing vapors, mist, dust or gas.

6.2 Environmental precautions
Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Cover spillage with suitable absorbent material. Hold all material for appropriate disposal as described under section 13 of SDS.

6.4 Reference to other sections
For required PPE see section 8. For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid inhalation, contact with eyes, skin and clothing. Avoid the formation of dust and aerosols. Use in a well-ventilated area. Keep away from sources of ignition. Avoid prolonged or repeated exposure.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool, well-ventilated area. Keep away from direct sunlight. Keep container tightly sealed until ready for use.

7.3 Specific end uses
Not applicable.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters
Components with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls
Appropriate Engineering Controls
Use in a fume hood where applicable. Ensure all engineering measures described under section 7 of SDS are in place. Ensure laboratory is equipped with a safety shower and eye wash station.

Personal Protective Equipment
Eye / Face Protection
Use appropriate safety glasses.

Skin Protection
Use appropriate chemical resistant gloves (minimum requirement use standard BS EN 374:2003). Gloves should be inspected before use. Wash and dry hands thoroughly after handling.

Body Protection
Wear appropriate protective clothing.

Respiratory Protection
If risk assessment indicates necessary, use a suitable respirator.

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>Appearance</td>
<td>Lyophilized white powder or clear liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>Little to none</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available.</td>
</tr>
<tr>
<td>pH</td>
<td>No data available.</td>
</tr>
<tr>
<td>Melting / Freezing Point</td>
<td>No data available.</td>
</tr>
<tr>
<td>Boiling Point / Range</td>
<td>No data available.</td>
</tr>
<tr>
<td>Flash Point</td>
<td>No data available.</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No data available.</td>
</tr>
<tr>
<td>Flammability (Solid, Gas)</td>
<td>No data available.</td>
</tr>
<tr>
<td>Upper / Lower Flammability or Explosive Limits</td>
<td>No data available.</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No data available.</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>No data available.</td>
</tr>
<tr>
<td>Relative Density</td>
<td>No data available.</td>
</tr>
<tr>
<td>Solubility</td>
<td>No data available.</td>
</tr>
<tr>
<td>Partition Coefficient</td>
<td>No data available.</td>
</tr>
<tr>
<td>Auto ignition Temperature</td>
<td>No data available.</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available.</td>
</tr>
<tr>
<td>Explosive Properties</td>
<td>No data available.</td>
</tr>
<tr>
<td>Oxidizing Properties</td>
<td>No data available.</td>
</tr>
</tbody>
</table>

9.2 Other safety information
No data available.

10. STABILITY AND REACTIVITY
10.1 Reactivity
Stable under recommended transport or storage conditions.

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Hazardous reactions will not occur under normal transport or storage conditions. Decomposition may occur on exposure to conditions or materials listed below.

10.4 Conditions to avoid
Heat, moisture.

10.5 Incompatible materials
Strong acids/alkalis, strong oxidizing/reducing agents.

10.6 Hazardous decomposition products
Strong acids/alkalis, strong oxidizing/reducing agents.

11. TOXICOLOGICAL INFORMATION
11.1 Information on toxicological effects

Acute Toxicity
Classified based on available data.

Skin Corrosion / Irritation
Classified based on available data.

Serious Eye Damage / Irritation
Classified based on available data.

Respiratory or Skin Sensitization
Classified based on available data.

Germ Cell Mutagenicity
Classified based on available data.

Carcinogenicity
Classified based on available data.

Reproductive Toxicity
Classified based on available data.

Specific Target Organ Toxicity - Single Exposure
Classified based on available data.

Specific Target Organ Toxicity - Repeated Exposure
12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available.

12.2 Persistence and degradability
No data available.

12.3 Bio accumulative potential
No data available.

12.4 Mobility in soil
No data available.

12.5 Results of PBT and vPvB assessment
No data available.

12.6 Other adverse effects
No data available.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Product
Transfer to a suitable container and arrange for collection by specialized disposal company in accordance with national, regional, or local legislation.

Contaminated Packaging
Dispose of in a regulated landfill site or other method for hazardous or toxic wastes in accordance with national, regional, or local legislation.

14. TRANSPORT INFORMATION

Classified according to the criteria of the UN Model Regulations as reflected in the IMDG Code, ADR, RID, DOT and IATA.

14.1 UN-Number
Does not meet the criteria for classification as hazardous for transport.

14.2 UN proper shipping name
Does not meet the criteria for classification as hazardous for transport.

14.3 Transport hazard class(es)
Does not meet the criteria for classification as hazardous for transport.

14.4 Packaging group
Does not meet the criteria for classification as hazardous for transport.

14.5 Environmental hazards
Does not meet the criteria for classification as hazardous for transport.

14.6 Special precautions for users
Does not meet the criteria for classification as hazardous for transport.

Additional Transport Information
Does not meet the criteria for classification as hazardous for transport.

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 453/2010.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
TSCA (Toxic Substances Control Act): Not applicable.
SARA 313: Not applicable.
SARA 311/312: Not applicable.
CERCLA Reportable Quantity: Not applicable.
California Proposition 65: Not applicable.
15.2 Chemical safety assessment
A Chemical Safety Assessment has not been made for this product.

16. OTHER INFORMATION

Further Information

Copyright © 2018 R&D Systems, Inc. a Bio-Techne Brand

This company shall not be held liable for any damage resulting from handling or from contact with the above product. This material must only be handled by suitably qualified experienced scientists in appropriately equipped and authorized facilities. The above information is believed to be correct but does not purport to be all inclusive and should be used as a guide only for experienced personnel. Always consult your safety advisor and follow appropriate local and national safety legislature. The absence of warning must not, under any circumstance, be taken to mean that no hazard exists.

End of safety data sheet.
1. **IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**

1.1 **Product Identifiers**

- **Product Name:** Standard (contains Sodium Azide < 0.1%)

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

- **Identified Uses:** For research use only.

1.3 **Details of the supplier of the safety data sheet**

- **Company:** R&D Systems, Inc. a Bio-Techne Brand
  - 614 McKinley Place NE
  - Minneapolis, MN 55413, USA
  - Telephone: 1-800-343-7475
  - Fax: 1-612-656-4400
  - Internet: www.rndsystems.com
  - Email address: info@bio-techne.com
- **Canada:**
  - 461 North Service Rd West
  - Oakville, ON L6M 2V5
  - Telephone: 1-855-668-8722
  - Fax: 902-827-6402
  - Email address: Canada.inquiries@bio-techne.com
- **United Kingdom:**
  - 19 Barton Lane
  - Abingdon Science Park
  - Abingdon, OX14 3NB
  - Telephone: 44 (0)1235 529449
  - Fax: 44 (0)1235 533420
  - Email address: info.emea@bio-techne.com
- **China:**
  - 1193 Changning Road
  - Unit 1901, Raffles Changning Office
  - Shanghai, China
  - Telephone: 86-400-821-3475
  - Fax: 76 (021)52371001
  - Email address: techsupport.cn@bio-techne.com

1.4 **Emergency Telephone Number**

Emergency Tel: For chemical emergency, spill, leak, fire, exposure, or accident call CHEMTREC day or night: Within U.S. 1-800-262-8200 Worldwide 1-703-741-5500

Bio-Techne Tel: US: 612-379-2956 or 800-343-7475 / Europe: +44(0)1235-529449 / China 86-400-821-3475

2. **HAZARDS IDENTIFICATION**

2.1 **Classification of the substance or mixture**


This substance does not meet the classification criteria of the EC Directives 67/548/EED, 1999/45/EC, 1272/2008 [CLP], GHS or 29 CFR 1910.1200 [OSHA]

2.2 **Label Elements**

The product does not need to be labelled in accordance with EC directives or respective national laws.

2.3 **Other Hazards - None**

3. **COMPOSITION/INFORMATION ON INGREDIENTS**

3.1 **Substances**

Not applicable.

3.2 **Mixtures**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No.</th>
<th>EC No.</th>
<th>Index No.</th>
<th>Classification</th>
<th>Conc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Azide &lt; 0.1%</td>
<td>26628-22-8</td>
<td>247-852-1</td>
<td>011-004-00-7</td>
<td>Not hazardous at this concentration</td>
<td>&lt; 0.1%</td>
</tr>
</tbody>
</table>

4. **FIRST AID MEASURES**

4.1 **Description of first aid measures**

- **General Advice**
  Consult a doctor and show this safety data sheet.

- **If Inhaled**
  Remove to fresh air and monitor breathing. If breathing becomes difficult, give oxygen. If breathing stops, give artificial respiration. Consult a doctor.

- **In Case of Skin Contact**
  Immediately wash skin with copious amounts of soap and water for at least 15 minutes. Remove contaminated clothing and shoes and wash before reuse. Consult a doctor.

- **In Case of Eye Contact**
  Flush with copious amounts of water for at least 15 minutes. Consult a doctor.

- **If Swallowed**
Rinse mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Consult a doctor.

4.2 Most important symptoms and effects, both acute and delayed
To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

4.3 Indication of immediate medical attention and special treatment needed
Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

5. FIRE-FIGHTING MEASURES
5.1 Extinguishing Media
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
In combustion, may emit toxic fumes.

5.3 Precautions for fire-fighters
Wear suitable protective clothing to prevent contact with skin and eyes and self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES
6.1 Personal precautions, protective equipment and emergency procedures
Do not take action without suitable protective clothing - see section 8 of SDS. Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid breathing vapors, mist, dust or gas.

6.2 Environmental precautions
Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Cover spillage with suitable absorbent material. Hold all material for appropriate disposal as described under section 13 of SDS.

6.4 Reference to other sections
For required PPE see section 8. For disposal see section 13.

7. HANDLING AND STORAGE
7.1 Precautions for safe handling
Avoid inhalation, contact with eyes, skin and clothing. Avoid the formation of dust and aerosols. Use in a well-ventilated area. Keep away from sources of ignition. Avoid prolonged or repeated exposure.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool, well-ventilated area. Keep away from direct sunlight. Keep container tightly sealed until ready for use.

7.3 Specific end uses
Not applicable.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION
8.1 Control parameters
Components with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls
Appropriate Engineering Controls
Use in a fume hood where applicable. Ensure all engineering measures described under section 7 of SDS are in place. Ensure laboratory is equipped with a safety shower and eye wash station.

Personal Protective Equipment
Eye / Face Protection
Use appropriate safety glasses.

Skin Protection
Use appropriate chemical resistant gloves (minimum requirement use standard BS EN 374:2003). Gloves should be inspected before use. Wash and dry hands thoroughly after handling.

Body Protection
Wear appropriate protective clothing.

Respiratory Protection
If risk assessment indicates necessary, use a suitable respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES
9.1 Information on basic physical and chemical properties
9.2 Other safety information

No data available.

10. STABILITY AND REACTIVITY

10.1 Reactivity
Stable under recommended transport or storage conditions.

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Hazardous reactions will not occur under normal transport or storage conditions. Decomposition may occur on exposure to conditions or materials listed below.

10.4 Conditions to avoid
Heat, moisture.

10.5 Incompatible materials
Strong acids/alkalis, strong oxidizing/reducing agents.

10.6 Hazardous decomposition products
Strong acids/alkalis, strong oxidizing/reducing agents.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute Toxicity
Classified based on available data.

Skin Corrosion / Irritation
Classified based on available data.

Serious Eye Damage / Irritation
Classified based on available data.

Respiratory or Skin Sensitization
Classified based on available data.

Germ Cell Mutagenicity
Classified based on available data.

Carcinogenicity
Classified based on available data.

Reproductive Toxicity
Classified based on available data.

Specific Target Organ Toxicity - Single Exposure
Classified based on available data.

Specific Target Organ Toxicity - Repeated Exposure
Classified based on available data.

Aspiration Hazard
Classified based on available data.

Symptoms / Routes of Exposure
Inhalation: There may be irritation of the throat with a feeling of tightness in the chest.
Ingestion: There may be irritation of the throat.
Skin: There may be mild irritation at the site of contact.
Eyes: There may be irritation and redness.

Delayed/Immediate Effects: No known symptoms.
12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available.

12.2 Persistence and degradability
No data available.

12.3 Bio accumulative potential
No data available.

12.4 Mobility in soil
No data available.

12.5 Results of PBT and vPvB assessment
No data available.

12.6 Other adverse effects
No data available.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Product
Transfer to a suitable container and arrange for collection by specialized disposal company in accordance with national, regional, or local legislation.

Contaminated Packaging
Dispose of in a regulated landfill site or other method for hazardous or toxic wastes in accordance with national, regional, or local legislation.

14. TRANSPORT INFORMATION

Classified according to the criteria of the UN Model Regulations as reflected in the IMDG Code, ADR, RID, DOT and IATA.

14.1 UN-Number
Does not meet the criteria for classification as hazardous for transport.

14.2 UN proper shipping name
Does not meet the criteria for classification as hazardous for transport.

14.3 Transport hazard class(es)
Does not meet the criteria for classification as hazardous for transport.

14.4 Packaging group
Does not meet the criteria for classification as hazardous for transport.

14.5 Environmental hazards
Does not meet the criteria for classification as hazardous for transport.

14.6 Special precautions for users
Does not meet the criteria for classification as hazardous for transport.

Additional Transport Information
Does not meet the criteria for classification as hazardous for transport.

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 453/2010.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
TSCA (Toxic Substances Control Act): Not applicable.
SARA 313: Not applicable.
SARA 311/312: Not applicable.
CERCLA Reportable Quantity: Not applicable.
California Proposition 65: Not applicable.

15.2 Chemical safety assessment
A Chemical Safety Assessment has not been made for this product.

16. OTHER INFORMATION

Further Information
Copyright © 2018 R&D Systems, Inc. a Bio-Techne Brand
This company shall not be held liable for any damage resulting from handling or from contact with the above product. This material must only be handled by suitably qualified experienced scientists in appropriately equipped and authorized facilities. The above information is believed to be correct but does not purport to be all inclusive and should be used as a guide only for experienced personnel. Always consult your safety advisor and follow appropriate local and national safety legislature. The absence of warning must not, under any circumstance, be taken to mean that no hazard exists.

End of safety data sheet.
1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifiers

Product Name: Assay Diluent (contains Proclin 300 Mixture)

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

Identified Uses: For research use only.

1.3 Details of the supplier of the safety data sheet

Company: R&D Systems, Inc. a Bio-Techne Brand
614 McKinley Place NE
Minneapolis, MN 55413, USA

Telephone: 1-800-343-7475
Fax: 1-612-656-4400
Internet: www.rndsystems.com
Email address: info@bio-techne.com

Canada: 461 North Service Rd West
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Telephone: 1-855-868-8722
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Abingdon Science Park
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Telephone: 44 (0)1235 529449
Fax: 44 (0)1235 533420
Email address: info.emea@bio-techne.com

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Unit 1901, Raffles Changning Office
Shanghai, China

Telephone: 86-400-821-3475
Fax: 76 (021)52371001
Email address: techsupport.cn@bio-techne.com

1.4 Emergency Telephone Number

Emergency Tel: For chemical emergency, spill, leak, fire, exposure, or accident call CHEMTREC day or night: Within U.S. 1-800-262-8200 Worldwide 1-703-741-5500
Bio-Techne Tel: US: 612-379-2956 or 800-343-7475 / Europe: +44(0)1235-529449 / China 86-400-821-3475

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Sensitization, skin - Category 1

2.2 Label Elements

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

Pictogram(s):

Signal Word: Warning

Hazard Statement(s):
H317 May cause an allergic skin reaction.

Precautionary Statement(s):
P261 Avoid breathing dust/fumes/gas/mist/vapors/spray.
P272 Contaminated work clothing should not be allowed out of the workplace.
P380 Wear protective gloves/protective clothing/eye protection/face protection.
P302+352 IF ON SKIN: Wash with plenty of soap and water.
P333+313 If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.

2.3 Other Hazards - None

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable.

3.2 Mixtures

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No.</th>
<th>EC No.</th>
<th>Index No.</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proclin 300 Mixture</td>
<td>&lt;0.1%</td>
<td>(active 96118-96-6 ingredients)</td>
<td>H317</td>
<td></td>
</tr>
</tbody>
</table>
4. **FIRST AID MEASURES**

4.1 **Description of first aid measures**

**General Advice**
Consult a doctor and show this safety data sheet.

**If Inhaled**
Remove to fresh air and monitor breathing. If breathing becomes difficult, give oxygen. If breathing stops, give artificial respiration. Consult a doctor.

**In Case of Skin Contact**
Immediately wash skin with copious amounts of soap and water for at least 15 minutes. Remove contaminated clothing and shoes and wash before reuse. Consult a doctor.

**In Case of Eye Contact**
Flush with copious amounts of water for at least 15 minutes. Consult a doctor.

**If Swallowed**
Rinse mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Consult a doctor.

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

To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

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

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

5. **FIRE-FIGHTING MEASURES**

5.1 **Extinguishing Media**

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

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

In combustion, may emit toxic fumes.

5.3 **Precautions for fire-fighters**

Wear suitable protective clothing to prevent contact with skin and eyes and self-contained breathing apparatus.

6. **ACCIDENTAL RELEASE MEASURES**

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

Do not take action without suitable protective clothing - see section 8 of SDS. Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid breathing vapors, mist, dust or gas.

6.2 **Environmental precautions**

Do not let product enter drains.

6.3 **Methods and materials for containment and cleaning up**

Cover spillage with suitable absorbent material. Hold all material for appropriate disposal as described under section 13 of SDS.

6.4 **Reference to other sections**

For required PPE see section 8. For disposal see section 13.

7. **HANDLING AND STORAGE**

7.1 **Precautions for safe handling**

Avoid inhalation, contact with eyes, skin and clothing. Avoid the formation of dust and aerosols. Use in a well-ventilated area. Keep away from sources of ignition. Avoid prolonged or repeated exposure.

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

Store in cool, well-ventilated area. Keep away from direct sunlight. Keep container tightly sealed until ready for use.

7.3 **Specific end uses**

Not applicable.

8. **EXPOSURE CONTROLS/PERSONAL PROTECTION**

8.1 **Control parameters**

Contains no substances with occupational exposure limit values.

8.2 **Exposure controls**

Use in a fume hood where applicable. Ensure all engineering measures described under section 7 of SDS are in place. Ensure laboratory is equipped with a safety shower and eye wash station.

**Personal Protective Equipment**
Eye / Face Protection
Use appropriate safety glasses.

Skin Protection
Use appropriate chemical resistant gloves (minimum requirement use standard BS EN 374:2003). Gloves should be inspected before use. Wash and dry hands thoroughly after handling.

Body Protection
Wear appropriate protective clothing.

Respiratory Protection
If risk assessment indicates necessary, use a suitable respirator.

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>Appearance</td>
<td>Lyophilized white powder or clear liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>Little to none</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
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</tr>
<tr>
<td>Melting / Freezing Point</td>
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</tr>
<tr>
<td>Boiling Point / Range</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash Point</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation Rate</td>
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</tr>
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<td>No data available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative Density</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility</td>
<td>No data available</td>
</tr>
<tr>
<td>Partition Coefficient</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto ignition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive Properties</td>
<td>No data available</td>
</tr>
</tbody>
</table>

9.2 Other safety information
No data available.

10. STABILITY AND REACTIVITY

10.1 Reactivity
Stable under recommended transport or storage conditions.

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Hazardous reactions will not occur under normal transport or storage conditions. Decomposition may occur on exposure to conditions or materials listed below.

10.4 Conditions to avoid
Heat, moisture.

10.5 Incompatible materials
Strong acids/alkalis, strong oxidizing/reducing agents.

10.6 Hazardous decomposition products
Strong acids/alkalis, strong oxidizing/reducing agents.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute Toxicity
Classified based on available data.

Skin Corrosion / Irritation
Classified based on available data.

Serious Eye Damage / Irritation
Classified based on available data.

Respiratory or Skin Sensitization
Classified based on available data.

Germ Cell Mutagenicity
Classified based on available data.

Carcinogenicity
Classified based on available data.

Reproductive Toxicity
Classified based on available data.

Specific Target Organ Toxicity - Single Exposure
Classified based on available data.

Specific Target Organ Toxicity - Repeated Exposure
Aspiration Hazard

Symptoms / Routes of Exposure

- **Inhalation:** There may be irritation of the throat with a feeling of tightness in the chest.
- **Ingestion:** There may be irritation of the throat.
- **Skin:** There may be mild irritation at the site of contact.
- **Eyes:** There may be irritation and redness.

Delayed/Immediate Effects: No known symptoms

Additional Information

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12. **ECOLOGICAL INFORMATION**

12.1 **Toxicity**
No data available.

12.2 **Persistence and degradability**
No data available.

12.3 **Bio accumulative potential**
No data available.

12.4 **Mobility in soil**
No data available.

12.5 **Results of PBT and vPvB assessment**
No data available.

12.6 **Other adverse effects**
No data available.

13. **DISPOSAL CONSIDERATIONS**

13.1 **Waste treatment methods**

- **Product**
  Transfer to a suitable container and arrange for collection by specialized disposal company in accordance with national, regional, or local legislation.

- **Contaminated Packaging**
  Dispose of in a regulated landfill site or other method for hazardous or toxic wastes in accordance with national, regional, or local legislation.

14. **TRANSPORT INFORMATION**

Classified according to the criteria of the UN Model Regulations as reflected in the IMDG Code, ADR, RID, DOT and IATA.

14.1 **UN-Number**
Does not meet the criteria for classification as hazardous for transport.

14.2 **UN proper shipping name**
Does not meet the criteria for classification as hazardous for transport.

14.3 **Transport hazard class(es)**
Does not meet the criteria for classification as hazardous for transport.

14.4 **Packaging group**
Does not meet the criteria for classification as hazardous for transport.

14.5 **Environmental hazards**
Does not meet the criteria for classification as hazardous for transport.

14.6 **Special precautions for users**
Does not meet the criteria for classification as hazardous for transport.

**Additional Transport Information**

Does not meet the criteria for classification as hazardous for transport.

15. **REGULATORY INFORMATION**

This safety datasheet complies with the requirements of Regulation (EC) No. 453/2010.

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

- **TSCA (Toxic Substances Control Act):** Not applicable.
- **SARA 313:** Not applicable.
- **SARA 311/312:** Not applicable.
- **CERCLA Reportable Quantity:** Not applicable.
- **California Proposition 65:** Not applicable.
15.2 Chemical safety assessment

A Chemical Safety Assessment has not been made for this product.

16. OTHER INFORMATION

Further Information

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This company shall not be held liable for any damage resulting from handling or from contact with the above product. This material must only be handled by suitably qualified experienced scientists in appropriately equipped and authorized facilities. The above information is believed to be correct but does not purport to be all inclusive and should be used as a guide only for experienced personnel. Always consult your safety advisor and follow appropriate local and national safety legislature. The absence of warning must not, under any circumstance, be taken to mean that no hazard exists.

End of safety data sheet.
1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifiers
Product Name: Calibrator Diluent (contains Proclin 300 mixture and Sodium Azide)

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified Uses: For research use only.

1.3 Details of the supplier of the safety data sheet
Company: R&D Systems, Inc. a Bio-Techne Brand
162 McKinley Place NE
Minneapolis, MN 55413, USA
Telephone: 1-800-343-7475
Fax: 1-612-656-4400
Internet: www.rndsystems.com
Email address: info@bio-techne.com

Canada: 461 North Service Rd West
Unit B37
Oakville, ON L6M 2V5
Telephone: 1-855-668-8722
Fax: 902-827-6402
Email address: Canada.inquiries@bio-techne.com

United Kingdom: 19 Barton Lane
Abingdon Science Park
Abingdon, OX14 3NB
Telephone: +44(0)1235 529449
Fax: +44 (0)1235 533420
Email address: info.emea@bio-techne.com

China: 1193 Changning Road
Unit 1901, Raffles Changning Office
Shanghai, China
Telephone: 86-400-821-3475
Fax: 76 (021)52371001
Email address: techsupport.cn@bio-techne.com

1.4 Emergency Telephone Number
Emergency Tel: For chemical emergency, spill, leak, fire, exposure, or accident call CHEMTREC day or night:
US: 612-379-2956 or 800-343-7475 / Europe: +44(0)1235-529449 / China 86-400-821-3475

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
Sensitization, skin - Category 1

2.2 Label Elements
Labeling according to Regulation (EC) No 1272/2008 [GHS/CLP]
Pictogram(s):

Signal Word: Warning

Hazard Statement(s):
H317 May cause an allergic skin reaction.

Precautionary Statement(s):
P261 Avoid breathing dust/fumes/gas/mist/vapours/spray.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P302+352 If ON SKIN: Wash with plenty of soap and water.
P333+313 If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.

2.3 Other Hazards - None

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances
Not applicable.

3.2 Mixtures

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No.</th>
<th>EC No.</th>
<th>Index No.</th>
<th>Classification</th>
<th>Conc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proclin 300 Mixture &lt;0.1% (active 96118-96-6 ingredients)</td>
<td></td>
<td></td>
<td></td>
<td>H317</td>
<td></td>
</tr>
</tbody>
</table>
4. FIRST AID MEASURES

4.1 Description of first aid measures
   
   General Advice
   Consult a doctor and show this safety data sheet.

   If Inhaled
   Remove to fresh air and monitor breathing. If breathing becomes difficult, give oxygen. If breathing stops, give artificial respiration. Consult a doctor.

   In Case of Skin Contact
   Immediately wash skin with copious amounts of soap and water for at least 15 minutes. Remove contaminated clothing and shoes and wash before reuse. Consult a doctor.

   In Case of Eye Contact
   Flush with copious amounts of water for at least 15 minutes. Consult a doctor.

   If Swallowed
   Rinse mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Consult a doctor.

4.2 Most important symptoms and effects, both acute and delayed
   
   To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

4.3 Indication of immediate medical attention and special treatment needed
   
   Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing Media
   
   Suitable extinguishing media
   Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
   
   In combustion, may emit toxic fumes.

5.3 Precautions for fire-fighters
   
   Wear suitable protective clothing to prevent contact with skin and eyes and self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
   
   Do not take action without suitable protective clothing - see section 8 of SDS. Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid breathing vapors, mist, dust or gas.

6.2 Environmental precautions
   
   Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
   
   Cover spillage with suitable absorbent material. Hold all material for appropriate disposal as described under section 13 of SDS.

6.4 Reference to other sections
   
   For required PPE see section 8. For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
   
   Avoid inhalation, contact with eyes, skin and clothing. Avoid the formation of dust and aerosols. Use in a well-ventilated area. Keep away from sources of ignition. Avoid prolonged or repeated exposure.

7.2 Conditions for safe storage, including any incompatibilities
   
   Store in cool, well-ventilated area. Keep away from direct sunlight. Keep container tightly sealed until ready for use.

7.3 Specific end uses
   
   Not applicable.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters
   
   Components with workplace control parameters
   Contains no substances with occupational exposure limit values.

8.2 Exposure controls
   
   Appropriate Engineering Controls
   Use in a fume hood where applicable. Ensure all engineering measures described under section 7 of SDS are in place. Ensure laboratory is equipped with a safety shower and eye wash station.

   Personal Protective Equipment
**Eye / Face Protection**
Use appropriate safety glasses.

**Skin Protection**
Use appropriate chemical resistant gloves (minimum requirement use standard BS EN 374:2003). Gloves should be inspected before use. Wash and dry hands thoroughly after handling.

**Body Protection**
Wear appropriate protective clothing.

**Respiratory Protection**
If risk assessment indicates necessary, use a suitable respirator.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
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<td>Appearance</td>
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<td>Odor</td>
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<tr>
<td>pH</td>
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<td>Flash Point</td>
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<td>Evaporation Rate</td>
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<td>Relative Density</td>
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<tr>
<td>Solubility(ies)</td>
<td>No data available.</td>
</tr>
<tr>
<td>Partition Coefficient</td>
<td>No data available.</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>No data available.</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available.</td>
</tr>
<tr>
<td>Explosive Properties</td>
<td>No data available.</td>
</tr>
<tr>
<td>Oxidizing Properties</td>
<td>No data available.</td>
</tr>
</tbody>
</table>

### 10. STABILITY AND REACTIVITY

10.1 Reactivity
Stable under recommended transport or storage conditions.

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Hazardous reactions will not occur under normal transport or storage conditions. Decomposition may occur on exposure to conditions or materials listed below.

10.4 Conditions to avoid
Heat, moisture.

10.5 Incompatible materials
Strong acids/alkalis, strong oxidising/reducing agents.

10.6 Hazardous decomposition products
Strong acids/alkalis, strong oxidising/reducing agents.

### 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

- **Acute Toxicity**
  - Classified based on available data

- **Skin Corrosion / Irritation**
  - Classified based on available data

- **Serious Eye Damage / Irritation**
  - Classified based on available data

- **Respiratory or Skin Sensitization**
  - Classified based on available data

- **Germ Cell Mutagenicity**
  - Classified based on available data

- **Carcinogenicity**
  - Classified based on available data

- **Reproductive Toxicity**
  - Classified based on available data

- **Specific Target Organ Toxicity - Single Exposure**
  - Classified based on available data

- **Specific Target Organ Toxicity - Repeated Exposure**
  - Classified based on available data
Aspiration Hazard

Symptoms / Routes of Exposure

Inhalation: There may be irritation of the throat with a feeling of tightness in the chest.

Ingestion: There may be irritation of the throat.

Skin: There may be mild irritation at the site of contact.

Eyes: There may be irritation and redness.

Delayed / Immediate Effects: No known symptoms.

Additional Information

ECOLOGICAL INFORMATION

12.1 Toxicity
No data available.

12.2 Persistence and degradability
No data available.

12.3 Bioaccumulative potential
No data available.

12.4 Mobility in soil
No data available.

12.5 Results of PBT and vPvB assessment
No data available.

12.6 Other adverse effects
No data available.

DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Transfer to a suitable container and arrange for collection by specialized disposal company in accordance with national, regional, or local legislation.

Contaminated Packaging
Dispose of in a regulated landfill site or other method for hazardous or toxic wastes in accordance with national, regional, or local legislation.

TRANSPORT INFORMATION

14.1 UN-Number
Does not meet the criteria for classification as hazardous for transport.

14.2 UN proper shipping name
Does not meet the criteria for classification as hazardous for transport.

14.3 Transport hazard class(es)
Does not meet the criteria for classification as hazardous for transport.

14.4 Packaging group
Does not meet the criteria for classification as hazardous for transport.

14.5 Environmental hazards
Does not meet the criteria for classification as hazardous for transport.

14.6 Special precautions for users
Does not meet the criteria for classification as hazardous for transport.

REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 453/2010.

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

TSCA (Toxic Substances Control Act) : Not applicable.
SARA 313 : Not applicable.
SARA 311/312 : Not applicable.
CERCLA Reportable Quantity : Not applicable.
California Proposition 65 : Not applicable.
A Chemical Safety Assessment has not been made for this product.

Further Information

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This company shall not be held liable for any damage resulting from handling or from contact with the above product. This material must only be handled by suitably qualified experienced scientists in appropriately equipped and authorized facilities. The above information is believed to be correct but does not purport to be all inclusive and should be used as a guide only for experienced personnel. Always consult your safety advisor and follow appropriate local and national safety legislature. The absence of warning must not, under any circumstance, be taken to mean that no hazard exists.

End of safety data sheet

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

This substance does not meet the classification criteria of the EC Directives 67/548/EEC, 1999/45/EC, 1272/2008 [CLP], GHS or 29 CFR 1910.1200 [OSHA].

2.2 Label Elements

The product does not need to be labelled in accordance with EC directives or respective national laws.

2.3 Other Hazards - None

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable.

3.2 Mixtures

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No.</th>
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<th>Conc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Azide</td>
<td>26628-22-8</td>
<td>247-852-1</td>
<td>011-004-00-7</td>
<td>Not hazardous at this concentration.</td>
<td>&lt; 0.1 %</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

4.1 Description of first aid measures

General Advice

Consult a doctor and show this safety data sheet.

If Inhaled

Remove to fresh air and monitor breathing. If breathing becomes difficult, give oxygen. If breathing stops, give artificial respiration. Consult a doctor.

In Case of Skin Contact

Immediately wash skin with copious amounts of soap and water for at least 15 minutes. Remove contaminated clothing and shoes and wash before reuse. Consult a doctor.

In Case of Eye Contact

Flush with copious amounts of water for at least 15 minutes. Consult a doctor.

If Swallowed

Rinse mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Consult a doctor.

4.2 Most important symptoms and effects, both acute and delayed

To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

4.3 Indication of immediate medical attention and special treatment needed

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing Media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

In combustion, may emit toxic fumes.

5.3 Precautions for fire-fighters

Wear suitable protective clothing to prevent contact with skin and eyes and self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Do not take action without suitable protective clothing - see section 8 of SDS. Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid breathing vapors, mist, dust or gas.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Cover spillage with suitable absorbent material. Hold all material for appropriate disposal as described under section 13 of SDS.
6.4 Reference to other sections
For required PPE see section 8. For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid inhalation, contact with eyes, skin and clothing. Avoid the formation of dust and aerosols. Use in a well-ventilated area. Keep away from sources of ignition. Avoid prolonged or repeated exposure.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool, well-ventilated area. Keep away from direct sunlight. Keep container tightly sealed until ready for use.

7.3 Specific end uses
Not applicable.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters
Components with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls
Appropriate Engineering Controls
Use in a fume hood where applicable. Ensure all engineering measures described under section 7 of SDS are in place. Ensure laboratory is equipped with a safety shower and eye wash station.

Personal Protective Equipment
Eye / Face Protection
Use appropriate safety glasses.

Skin Protection
Use appropriate chemical resistant gloves (minimum requirement use standard BS EN 374:2003). Gloves should be inspected before use. Wash and dry hands thoroughly after handling.

Body Protection
Wear appropriate protective clothing.

Respiratory Protection
If risk assessment indicates necessary, use a suitable respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

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<td>No data available.</td>
</tr>
<tr>
<td>Oxidizing Properties</td>
<td>No data available.</td>
</tr>
</tbody>
</table>

9.2 Other safety information
No data available.

10. STABILITY AND REACTIVITY

10.1 Reactivity
Stable under recommended transport or storage conditions.

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Hazardous reactions will not occur under normal transport or storage conditions. Decomposition may occur on exposure to conditions or materials listed below.

10.4 Conditions to avoid
Heat, moisture.

10.5 Incompatible materials
Strong acids/alkalis, strong oxidising/reducing agents.

10.6 Hazardous decomposition products
Strong acids/alkalis, strong oxidising/reducing agents.
11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute Toxicity
Classified based on available data

Skin Corrosion / Irritation
Classified based on available data

Serious Eye Damage / Irritation
Classified based on available data

Respiratory or Skin Sensitization
Classified based on available data

Germ Cell Mutagenicity
Classified based on available data

Carcinogenicity
Classified based on available data

Reproductive Toxicity
Classified based on available data

Specific Target Organ Toxicity - Single Exposure
Classified based on available data

Specific Target Organ Toxicity - Repeated Exposure
Classified based on available data

Aspiration Hazard
Classified based on available data

Symptoms / Routes of Exposure

Inhalation: There may be irritation of the throat with a feeling of tightness in the chest.
Ingestion: There may be irritation of the throat.
Skin: There may be mild irritation at the site of contact.
Eyes: There may be irritation and redness.

Delayed / Immediate Effects: No known symptoms.

Additional Information
Classified based on available data

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available.

12.2 Persistence and degradability
No data available.

12.3 Bioaccumulative potential
No data available.

12.4 Mobility in soil
No data available.

12.5 Results of PBT and vPvB assessment
No data available.

12.6 Other adverse effects
No data available.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Transfer to a suitable container and arrange for collection by specialized disposal company in accordance with national, regional, or local legislation.

Contaminated Packaging
Dispose of in a regulated landfill site or other method for hazardous or toxic wastes in accordance with national, regional, or local legislation.

14. TRANSPORT INFORMATION

Classified according to the criteria of the UN Model Regulations as reflected in the IMDG Code, ADR, RID, DOT and IATA.

14.1 UN-Number
Does not meet the criteria for classification as hazardous for transport.

14.2 UN proper shipping name
14.3 Transport hazard class(es)
Does not meet the criteria for classification as hazardous for transport.

14.4 Packaging group
Does not meet the criteria for classification as hazardous for transport.

14.5 Environmental hazards
Does not meet the criteria for classification as hazardous for transport.

14.6 Special precautions for users
Does not meet the criteria for classification as hazardous for transport.

Additional Transport Information
Does not meet the criteria for classification as hazardous for transport.

15. REGULATORY INFORMATION
This safety datasheet complies with the requirements of Regulation (EC) No. 453/2010.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
TSCA (Toxic Substances Control Act) : Listed
SARA 313 : Listed
SARA 311/312 : Listed
CERCLA Reportable Quantity : 1000 lbs.
California Proposition 65 : Not applicable.

15.2 Chemical safety assessment
A Chemical Safety Assessment has not been made for this product.

16. OTHER INFORMATION
Further Information
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This company shall not be held liable for any damage resulting from handling or from contact with the above product. This material must only be handled by suitably qualified experienced scientists in appropriately equipped and authorized facilities. The above information is believed to be correct but does not purport to be all inclusive and should be used as a guide only for experienced personnel. Always consult your safety advisor and follow appropriate local and national safety legislature. The absence of warning must not, under any circumstance, be taken to mean that no hazard exists.

End of safety data sheet
1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifiers

Product Name: Wash Buffer Concentrate (contains Proclin 300 Mixture)

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

Identified Uses: For research use only.

1.3 Details of the supplier of the safety data sheet

Company: R&D Systems, Inc. a Bio-Techne Brand

614 McKinley Place NE
Minneapolis, MN 55413, USA

Telephone: 1-800-343-7475
Fax: 1-612-656-4400
Internet: www.rndsystems.com
Email address: info@bio-techne.com

Canada: 461 North Service Rd West
Unit B37
Oakville, ON L6M 2V5

Telephone: 1-855-868-8722
Fax: 902-827-8402
Email address: Canada.inquiries@bio-techne.com

United Kingdom: 19 Barton Lane
Abingdon Science Park
Abingdon, OX14 3NB

Telephone: 44 (0)1235 529449
Fax: 44 (0)1235 533420
Email address: info.emea@bio-techne.com

China: 1193 Changning Road
Unit 1901, Raffles Changning Office
Shanghai, China

Telephone: 86-400-821-3475
Fax: 76 (021)52371001
Email address: techsupport.cn@bio-techne.com

1.4 Emergency Telephone Number

Emergency Tel: For chemical emergency, spill, leak, fire, exposure, or accident call CHEMTREC day or night: Within U.S. 1-800-262-8200 Worldwide 1-703-741-5500

Bio-Techne Tel: US: 612-379-2956 or 800-343-7475 / Europe: +44(0)1235-529449 / China 86-400-821-3475

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture


Sensitization, skin - Category 1

2.2 Label Elements

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

Pictogram(s):

Signal Word: Warning

Hazard Statement(s):

H317 May cause an allergic skin reaction.

Precautionary Statement(s):

P261 Avoid breathing dust/fumes/gas/mist/vapors/spray.

P272 Contaminated work clothing should not be allowed out of the workplace.

P308 Wear protective gloves/protective clothing/eye protection/face protection.

P302+352 IF ON SKIN: Wash with plenty of soap and water.

P333+313 If skin irritation or rash occurs: Get medical advice/attention.

P362+P364 Take off contaminated clothing and wash it before reuse.

2.3 Other Hazards - None

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable.

3.2 Mixtures

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No.</th>
<th>EC No.</th>
<th>Index No.</th>
<th>Classification</th>
<th>Conc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proclin 300 Mixture &lt;0.1% (active 96118-96-6 ingredients)</td>
<td></td>
<td></td>
<td></td>
<td>H317</td>
<td></td>
</tr>
</tbody>
</table>
Mixture of 5-Chloro-2-Methyl-4-Isothiazolin-3-One (26172-55-4) and 2-Methyl-4-Isothiazolin-3-One (2682-20-4)

55965-84-9

4. FIRST AID MEASURES

4.1 Description of first aid measures

General Advice
Consult a doctor and show this safety data sheet.

If Inhaled
Remove to fresh air and monitor breathing. If breathing becomes difficult, give oxygen. If breathing stops, give artificial respiration. Consult a doctor.

In Case of Skin Contact
Immediately wash skin with copious amounts of soap and water for at least 15 minutes. Remove contaminated clothing and shoes and wash before reuse. Consult a doctor.

In Case of Eye Contact
Flush with copious amounts of water for at least 15 minutes. Consult a doctor.

If Swallowed
Rinse mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Consult a doctor.

4.2 Most important symptoms and effects, both acute and delayed

To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

4.3 Indication of immediate medical attention and special treatment needed

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing Media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

In combustion, may emit toxic fumes.

5.3 Precautions for fire-fighters

Wear suitable protective clothing to prevent contact with skin and eyes and self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Do not take action without suitable protective clothing - see section 8 of SDS. Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid breathing vapors, mist, dust or gas.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Cover spillage with suitable absorbent material. Hold all material for appropriate disposal as described under section 13 of SDS.

6.4 Reference to other sections

For required PPE see section 8. For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid inhalation, contact with eyes, skin and clothing. Avoid the formation of dust and aerosols. Use in a well-ventilated area. Keep away from sources of ignition. Avoid prolonged or repeated exposure.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool, well-ventilated area. Keep away from direct sunlight. Keep container tightly sealed until ready for use.

7.3 Specific end uses

Not applicable.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate Engineering Controls

Use in a fume hood where applicable. Ensure all engineering measures described under section 7 of SDS are in place. Ensure laboratory is equipped with a safety shower and eye wash station.

Personal Protective Equipment
Eye / Face Protection
Use appropriate safety glasses.

Skin Protection
Use appropriate chemical resistant gloves (minimum requirement use standard BS EN 374:2003). Gloves should be inspected before use. Wash and dry hands thoroughly after handling.

Body Protection
Wear appropriate protective clothing.

Respiratory Protection
If risk assessment indicates necessary, use a suitable respirator.

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>Appearance</td>
<td>Lyophilized white powder or clear liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>Little to none</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available.</td>
</tr>
<tr>
<td>pH</td>
<td>No data available.</td>
</tr>
<tr>
<td>Melting / Freezing Point</td>
<td>No data available.</td>
</tr>
<tr>
<td>Boiling Point / Range</td>
<td>No data available.</td>
</tr>
<tr>
<td>Flash Point</td>
<td>No data available.</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No data available.</td>
</tr>
<tr>
<td>Flammability (Solid, Gas)</td>
<td>No data available.</td>
</tr>
<tr>
<td>Upper / Lower Flammability or Explosive Limits</td>
<td>No data available.</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No data available.</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>No data available.</td>
</tr>
<tr>
<td>Relative Density</td>
<td>No data available.</td>
</tr>
<tr>
<td>Solubility</td>
<td>No data available.</td>
</tr>
<tr>
<td>Partition Coefficient</td>
<td>No data available.</td>
</tr>
<tr>
<td>Auto ignition Temperature</td>
<td>No data available.</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available.</td>
</tr>
<tr>
<td>Explosive Properties</td>
<td>No data available.</td>
</tr>
</tbody>
</table>

9.2 Other safety information
No data available.

10. STABILITY AND REACTIVITY

10.1 Reactivity
Stable under recommended transport or storage conditions.

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Hazardous reactions will not occur under normal transport or storage conditions. Decomposition may occur on exposure to conditions or materials listed below.

10.4 Conditions to avoid
Heat, moisture.

10.5 Incompatible materials
Strong acids/alkalis, strong oxidizing/reducing agents.

10.6 Hazardous decomposition products
Strong acids/alkalis, strong oxidizing/reducing agents.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute Toxicity
Classified based on available data.

Skin Corrosion / Irritation
Classified based on available data.

Serious Eye Damage / Irritation
Classified based on available data.

Respiratory or Skin Sensitization
Classified based on available data.

Germ Cell Mutagenicity
Classified based on available data.

Carcinogenicity
Classified based on available data.

Reproductive Toxicity
Classified based on available data.

Specific Target Organ Toxicity - Single Exposure
Classified based on available data.

Specific Target Organ Toxicity - Repeated Exposure
No data available.
Aspiration Hazard

Symptoms / Routes of Exposure

Inhalation: There may be irritation of the throat with a feeling of tightness in the chest.
Ingestion: There may be irritation of the throat.
Skin: There may be mild irritation at the site of contact.
Eyes: There may be irritation and redness.

Delayed/Immediate Effects: No known symptoms

Additional Information

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available.

12.2 Persistence and degradability
No data available.

12.3 Bio accumulative potential
No data available.

12.4 Mobility in soil
No data available.

12.5 Results of PBT and vPvB assessment
No data available.

12.6 Other adverse effects
No data available.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Product
Transfer to a suitable container and arrange for collection by specialized disposal company in accordance with national, regional, or local legislation.

Contaminated Packaging
Dispose of in a regulated landfill site or other method for hazardous or toxic wastes in accordance with national, regional, or local legislation.

14. TRANSPORT INFORMATION

Classified according to the criteria of the UN Model Regulations as reflected in the IMDG Code, ADR, RID, DCT and IATA.

14.1 UN-Number
Does not meet the criteria for classification as hazardous for transport.

14.2 UN proper shipping name
Does not meet the criteria for classification as hazardous for transport.

14.3 Transport hazard class(es)
Does not meet the criteria for classification as hazardous for transport.

14.4 Packaging group
Does not meet the criteria for classification as hazardous for transport.

14.5 Environmental hazards
Does not meet the criteria for classification as hazardous for transport.

14.6 Special precautions for users
Does not meet the criteria for classification as hazardous for transport.

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 453/2010.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
TSCA (Toxic Substances Control Act): Not applicable.
SARA 313: Not applicable.
SARA 311/312: Not applicable.
CERCLA Reportable Quantity: Not applicable.
California Proposition 65: Not applicable.
15.2 Chemical safety assessment
   A Chemical Safety Assessment has not been made for this product.

16. OTHER INFORMATION

   Further Information
   Copyright © 2018 R&D Systems, Inc. a Bio-Techne Brand

   This company shall not be held liable for any damage resulting from handling or from contact with the above product. This material must only be handled by suitably qualified experienced scientists in appropriately equipped and authorized facilities. The above information is believed to be correct but does not purport to be all inclusive and should be used as a guide only for experienced personnel. Always consult your safety advisor and follow appropriate local and national safety legislature. The absence of warning must not, under any circumstance, be taken to mean that no hazard exists.

   End of safety data sheet.
1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifiers

Product Name: Color Reagent B (contains N,N-Dimethylformamide and Tetramethylbenzidine)

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

Identified Uses: For research use only.

1.3 Details of the supplier of the safety data sheet

Company: R&D Systems, Inc. a Bio-Techne Brand

Telephone: 1-800-343-7475

614 McKinley Place NE

Fax: 1-612-656-4400

Minneapolis, MN 55413, USA

Internet: www.rndsystems.com

Email address: info@bio-techne.com

Canada: 461 North Service Rd West

Telephone: 1-855-668-8722

Unit B37

Fax: 902-827-6402

Oakville, ON L6M 2V5

Email address: Canada.inquiries@bio-techne.com

United Kingdom: 19 Barton Lane

Telephone: 44 (0)1235 529449

Abingdon Science Park

Fax: 44 (0)1235 533420

Abingdon, OX14 3NB

Email address: info.emea@bio-techne.com

China: 1193 Changning Road

Telephone: 86-400-821-3475

Unit 1901, Raffles Changning Office

Fax: 76 (021)52371001

Shanghai, China

Email address: techsupport.cn@bio-techne.com

1.4 Emergency Telephone Number

Emergency Tel: For chemical emergency, spill, leak, fire, exposure, or accident call CHEMTREC day or night: Within U.S. 1-800-262-8200 Worldwide 1-703-741-5500

Bio-Techne Tel: US: 612-379-2956 or 800-343-7475 / Europe: +44(0)1235-529449 / China 86-400-821-3475

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture


Acute Toxicity, dermal - Category 4

Skin Corrosion/Irritation - Category 2

Serious eye damage/eye irritation - Category 2A

Acute Toxicity, inhalation - Category 4

Reproductive Toxicity - Category 1B

2.2 Label Elements

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

Pictogram(s):

Signal Word: Danger

Hazard Statement(s):

H312 Harmful in contact with skin.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H360 May damage fertility or the unborn child

Precautionary Statement(s):

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P264 Wash hands thoroughly after handling.

P271 Use only in well-ventilated areas.

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

P302+352 IF ON SKIN: Wash with plenty of soap and water.

P304+340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308+313 IF exposed or concerned: Get medical advice/attention.

P312 Call poison center/doctor if you feel unwell.

P321 Specific treatment (see Section 4).
2.3 Other Hazards - None

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances
Not applicable.

3.2 Mixtures

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No.</th>
<th>EC No.</th>
<th>Index No.</th>
<th>Classification</th>
<th>Conc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>N,N-Dimethylformamide</td>
<td>68-12-2</td>
<td>200-679-5</td>
<td></td>
<td>H312 , H315 , H319 , H332 , H360</td>
<td>&lt; 25 %</td>
</tr>
<tr>
<td>Tetramethylbenzidine</td>
<td>54827-17-7</td>
<td>259-364-6</td>
<td>616-001-00-x</td>
<td>Not hazardous at this concentration.</td>
<td>&lt; 0.05 %</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

4.1 Description of first aid measures

General Advice
Consult a doctor and show this safety data sheet.

If Inhaled
Remove to fresh air and monitor breathing. If breathing becomes difficult, give oxygen. If breathing stops, give artificial respiration. Consult a doctor.

In Case of Skin Contact
Immediately wash skin with copious amounts of soap and water for at least 15 minutes. Remove contaminated clothing and shoes and wash before reuse. Consult a doctor.

In Case of Eye Contact
Flush with copious amounts of water for at least 15 minutes. Consult a doctor.

If Swallowed
Rinse mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Consult a doctor.

4.2 Most important symptoms and effects, both acute and delayed
To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

4.3 Indication of immediate medical attention and special treatment needed
Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing Media
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
In combustion, may emit toxic fumes.

5.3 Precautions for fire-fighters
Wear suitable protective clothing to prevent contact with skin and eyes and self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Do not take action without suitable protective clothing - see section 8 of SDS. Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid breathing vapors, mist, dust or gas.

6.2 Environmental precautions
Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Cover spillage with suitable absorbent material. Hold all material for appropriate disposal as described under section 13 of SDS.

6.4 Reference to other sections
For required PPE see section 8. For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid inhalation, contact with eyes, skin and clothing. Avoid the formation of dust and aerosols. Use in a well-ventilated area. Keep away from sources of ignition. Avoid prolonged or repeated exposure.

7.2 Conditions for safe storage, including any incompatibilities
N,N-Dimethylformamide - Store in cool, well-ventilated area. Keep away from direct sunlight. Keep container tightly sealed until ready for use. Store locked up.
Tetramethylbenzidine - Store in cool, well-ventilated area. Keep away from direct sunlight. Keep container tightly sealed until ready for use.

7.3 Specific end uses
Not applicable.
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No.</th>
<th>Agency</th>
<th>8 Hour TWA ppm</th>
<th>8 Hour TWA mg.m⁻³</th>
<th>15 Min STEL ppm</th>
<th>15 Min STEL mg.m⁻³</th>
</tr>
</thead>
<tbody>
<tr>
<td>N,N-Dimethylformamide</td>
<td>68-12-2</td>
<td>OSHA</td>
<td>10</td>
<td>30</td>
<td>20</td>
<td>61</td>
</tr>
<tr>
<td></td>
<td></td>
<td>UK-EH20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tetramethylbenzidine</td>
<td>54827-17-7</td>
<td>Contains no substances with occupational exposure limit values.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Appropriate Engineering Controls

Use in a fume hood where applicable. Ensure all engineering measures described under section 7 of SDS are in place. Ensure laboratory is equipped with a safety shower and eye wash station.

Personal Protective Equipment

Eye / Face Protection

Use appropriate safety glasses.

Skin Protection

Use appropriate chemical resistant gloves (minimum requirement use standard BS EN 374:2003). Gloves should be inspected before use. Wash and dry hands thoroughly after handling.

Body Protection

Wear appropriate protective clothing.

Respiratory Protection

If risk assessment indicates necessary, use a suitable respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>Appearance</td>
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<tr>
<td>Odor</td>
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<td>Odor Threshold</td>
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<td></td>
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<tr>
<td>pH</td>
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<td></td>
</tr>
<tr>
<td>Melting / Freezing Point</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Boiling Point / Range</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Flash Point</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Flammability (Solid, Gas)</td>
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<td></td>
</tr>
<tr>
<td>Upper / Lower Flammability or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explosive Limits</td>
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<tr>
<td>Vapor Pressure</td>
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<td></td>
</tr>
<tr>
<td>Vapor Density</td>
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<td>Relative Density</td>
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<td></td>
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<tr>
<td>Partition Coefficient</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Auto Ignition Temperature</td>
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<td></td>
</tr>
<tr>
<td>Decomposition Temperature</td>
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<td>Viscosity</td>
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<td>Explosive Properties</td>
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<tr>
<td>Oxidizing Properties</td>
<td>No data available</td>
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</tbody>
</table>

9.2 Other safety information

No data available.

10. STABILITY AND REACTIVITY

10.1 Reactivity

Stable under recommended transport or storage conditions.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions will not occur under normal transport or storage conditions. Decomposition may occur on exposure to conditions or materials listed below.

10.4 Conditions to avoid

N,N-Dimethylformamide - Heat, moisture.

Tetramethylbenzidine - Heat, flames, sparks.

10.5 Incompatible materials

N,N-Dimethylformamide - Strong acids/alkalis, strong oxidizing/reducing agents.

Tetramethylbenzidine - Strong oxidizing agents.

10.6 Hazardous decomposition products

Strong acids/alkalis, strong oxidizing/reducing agents.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute Toxicity

N,N-Dimethylformamide - LD50 - Oral, Rat - 2,800 mg/kg
Tetramethylbenzidine - No data available.

**Skin Corrosion / Irritation**
N,N-Dimethylformamide - Classified based on available data.
Tetramethylbenzidine - No data available.

**Serious Eye Damage / Irritation**
N,N-Dimethylformamide - Classified based on available data.
Tetramethylbenzidine - No data available.

**Respiratory or Skin Sensitization**
N,N-Dimethylformamide - Classified based on available data.
Tetramethylbenzidine - No data available.

**Germ Cell Mutagenicity**
N,N-Dimethylformamide - Genotoxicity in vitro – mouse – lymphocyte, Mutation in mammalian somatic cells.
Tetramethylbenzidine - Not classified to its carcinogenicity based on its IARC, ACGIH, NTP or EPA classification at levels less than 0.1%.

**Carcinogenicity**
N,N-Dimethylformamide - Classified based on available data.
Tetramethylbenzidine - Not classified to its carcinogenicity based on its IARC, ACGIH, NTP or EPA classification at levels less than 0.1%.

**Reproductive Toxicity**
N,N-Dimethylformamide - May cause congenital malformation in the fetus. Presumed human reproductive toxicant.
Tetramethylbenzidine - Classified based on available data.

**Specific Target Organ Toxicity - Single Exposure**
Classified based on available data.

**Specific Target Organ Toxicity - Repeated Exposure**
N,N-Dimethylformamide - Classified based on available data.
Tetramethylbenzidine - No data available.

**Aspiration Hazard**
N,N-Dimethylformamide - Classified based on available data.
Tetramethylbenzidine - No data available.

**Symptoms / Routes of Exposure**

*Inhalation:*
N,N-Dimethylformamide - Toxic if inhaled. May cause respiratory tract irritation.
Tetramethylbenzidine - There may be irritation of the throat with a feeling of tightness in the chest.

*Ingestion:*
N,N-Dimethylformamide - May be harmful if swallowed.
Tetramethylbenzidine - There may be irritation of the throat.

*Skin:*
N,N-Dimethylformamide - May be harmful if absorbed through the skin. May cause skin irritation.
Tetramethylbenzidine - There may be mild irritation at the site of contact.

*Eyes:*
N,N-Dimethylformamide - Causes serious eye irritation.
Tetramethylbenzidine - There may be irritation and redness.

*Delayed/Immediate Effects:*
N,N-Dimethylformamide - No known symptoms.
Tetramethylbenzidine - No data available.

**Additional Information**
N,N-Dimethylformamide - Classified based on available data.
Tetramethylbenzidine - No data available.

---

### 12. ECOLOGICAL INFORMATION

#### 12.1 Toxicity
No data available.

#### 12.2 Persistence and degradability
No data available.

#### 12.3 Bio accumulative potential
No data available.

#### 12.4 Mobility in soil
No data available.

#### 12.5 Results of PBT and vPvB assessment
No data available.

#### 12.6 Other adverse effects
No data available.

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### 13. DISPOSAL CONSIDERATIONS

#### 13.1 Waste treatment methods

**Product**
Dispose of contents/container in accordance with local/regional/national/international regulations.

**Contaminated Packaging**
Dispose of contents/container in accordance with local/regional/national/international regulations.
14. TRANSPORT INFORMATION

Classified according to the criteria of the UN Model Regulations as reflected in the IMDG Code, ADR, RID, DOT and IATA.

14.1 UN-Number

Does not meet the criteria for classification as hazardous for transport.

14.2 UN proper shipping name

Does not meet the criteria for classification as hazardous for transport.

14.3 Transport hazard class(es)

Does not meet the criteria for classification as hazardous for transport.

14.4 Packaging group

Does not meet the criteria for classification as hazardous for transport.

14.5 Environmental hazards

Does not meet the criteria for classification as hazardous for transport.

14.6 Special precautions for users

Does not meet the criteria for classification as hazardous for transport.

Additional Transport Information

Does not meet the criteria for classification as hazardous for transport.

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 453/2010.

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

TSCA (Toxic Substances Control Act): N,N-Dimethylformamide - Not applicable.

Tetramethylbenzidine - Is Listed.

SARA 313: Not applicable.

SARA 311/312: Not applicable.

CERCLA Reportable Quantity: Not applicable.

California Proposition 65:

N,N-Dimethylformamide WARNING: This product can expose you to chemicals including N,N-Dimethylformamide, which is known to the State of California to cause Cancer. For more information, go to www.P65Warnings.ca.gov.

Tetramethylbenzidine Not applicable.

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been made for this product.

16. OTHER INFORMATION

Further Information

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This company shall not be held liable for any damage resulting from handling or from contact with the above product. This material must only be handled by suitably qualified experienced scientists in appropriately equipped and authorized facilities. The above information is believed to be correct but does not purport to be all inclusive and should be used as a guide only for experienced personnel. Always consult your safety advisor and follow appropriate local and national safety legislature. The absence of warning must not, under any circumstance, be taken to mean that no hazard exists.

End of safety data sheet.
1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifiers

Product Name: Stop Solution (contains Sulfuric Acid)

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

Identified Uses: For research use only.

1.3 Details of the supplier of the safety data sheet

Company: R&D Systems, Inc. a Bio-Techne Brand
614 McKinley Place NE
Minneapolis, MN 55413, USA
Telephone: 1-800-343-7475
Fax: 1-612-656-4400
Email address: info@bio-techne.com

Canada: 461 North Service Rd West
Unit B37
Oakville, ON L6M 2V5
Telephone: 1-855-668-8722
Fax: 902-827-6402
Email address: Canada.inquiries@bio-techne.com

United Kingdom: 19 Barton Lane
Abingdon Science Park
Abingdon, OX14 3NB
Telephone: 44 (0)1235 533420
Fax: info.emea@bio-techne.com

China: 1193 Changning Road
Unit 1901, Raffles Changning Office
Shanghai, China
Telephone: 86-400-821-3475
Fax: 76 (021)52371001
Email address: techsupport.cn@bio-techne.com

1.4 Emergency Telephone Number

Emergency Tel: For chemical emergency, spill, leak, fire, exposure, or accident call CHEMTREC day or night: Within U.S. 1-800-262-8200 Worldwide 1-703-741-5500
Bio-Techne Tel: US: 612-379-2956 or 800-343-7475 / Europe: +44(0)1235-529449 / China 86-400-821-3475

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture


Skin Corrosion/Irritation - Category 2
Serious eye damage/eye irritation - Category 2A

2.2 Label Elements

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

Pictogram(s):

Signal Word: Warning

Hazard Statement(s):

H315 Causes skin irritation.
H319 Causes serious eye irritation.

Precautionary Statement(s):

P264 Wash hands thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P305+352 IF ON SKIN: Wash with plenty of soap and water.
P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321 Specific treatment (see Section 4).
P332+313 If skin irritation occurs: Get medical advice/attention.
P337+313 If eye irritation persists: Get medical advice/attention.
P362+364 Take off contaminated clothing and wash it before reuse.

2.3 Other Hazards - None

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable.

3.2 Mixtures

Component | CAS No. | EC No. | Index No. | Classification | Conc.
--- | --- | --- | --- | --- | ---

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4. FIRST AID MEASURES

4.1 Description of first aid measures

**General Advice**
Consult a doctor and show this safety data sheet.

**If Inhaled**
Move person into fresh air. If not breathing, give artificial respiration. Consult a physician. Show this MSDS.

**In Case of Skin Contact**
Immediately take off contaminated clothing or shoes. Wash with plenty of soap and water. Consult a physician.

**In Case of Eye Contact**
Rinse thoroughly with water for at least 15 minutes and immediately consult a physician.

**If Swallowed**
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Immediately consult a physician. Show this MSDS.

4.2 Most important symptoms and effects, both acute and delayed
See Section 11.

4.3 Indication of immediate medical attention and special treatment needed
Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing Media

**Suitable extinguishing media**
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
In case of fire, toxic and corrosive gases may be formed.

5.3 Precautions for fire-fighters
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use appropriate personal protective equipment to prevent contamination of skin, eyes and personal clothing. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

6.2 Environmental precautions
Keep away from drains.

6.3 Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For required PPE see section 8. For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid inhalation of vapor or mist. Use normal measures for preventive fire protection.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end uses
Not applicable.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

**Components with workplace control parameters**
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

**Appropriate Engineering Controls**
Use with adequate ventilation including local extraction. Ensure that eyewash stations and safety showers are close to the workstation location.

**Personal Protective Equipment**

**Eye / Face Protection**
Wear approved safety goggles.

**Skin Protection**
Handle with protective gloves, plastic or rubber. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

### Body Protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved. Wear suitable protective clothing as protection against splashing or contamination.

### Respiratory Protection

In case of inadequate ventilation, use a suitable respirator. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

## 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>Appearance</td>
<td>Colorless liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>Pungent</td>
</tr>
<tr>
<td>Odor Threshold</td>
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</tr>
<tr>
<td>pH</td>
<td>~1</td>
</tr>
<tr>
<td>Melting / Freezing Point</td>
<td>No data available.</td>
</tr>
<tr>
<td>Boiling Point / Range</td>
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</tr>
<tr>
<td>Flash Point</td>
<td>No data available.</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No data available.</td>
</tr>
<tr>
<td>Flammability (Solid, Gas)</td>
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</tr>
<tr>
<td>Upper / Lower Flammability or Explosive Limits</td>
<td>No data available.</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No data available.</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>No data available.</td>
</tr>
<tr>
<td>Relative Density</td>
<td>No data available.</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble</td>
</tr>
<tr>
<td>Partition Coefficient</td>
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</tr>
<tr>
<td>Auto Ignition Temperature</td>
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</tr>
<tr>
<td>Decomposition Temperature</td>
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<tr>
<td>Viscosity</td>
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</tr>
<tr>
<td>Explosive Properties</td>
<td>No data available.</td>
</tr>
<tr>
<td>Oxidizing Properties</td>
<td>No data available.</td>
</tr>
</tbody>
</table>

### 9.2 Other safety information

No data available.

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

Contact with metals produces highly flammable hydrogen gas. Addition of water liberates excessive heat.

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

### 10.4 Conditions to avoid

Bases, Halides, Metals, Alkalis, Acetonitrile.

### 10.5 Incompatible materials

Most metals, oxidizers, reducers, bases, metal carbonates, cyanides, sulphides, carbides, oxides, metal acetylides, hydrides, halogens, organic or combustible materials, perchlorates, acetonitrile, permanganates, alcohols, picrotes.

### 10.6 Hazardous decomposition products

Products formed under fire conditions: oxides of Sulphur, hydrogen gas.

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute Toxicity

Can cause severe burns upon contact while the vapors or mist are corrosive and can cause severe irritation or damage to the nose, throat and lungs. Ingestion of this product causes pain, nausea and vomiting and may be fatal if large doses are ingested.

#### Skin Corrosion / Irritation

Can cause severe burns.

#### Serious Eye Damage / Irritation

Can cause severe burns.

#### Respiratory or Skin Sensitization

 Classified based on available data

#### Germ Cell Mutagenicity

 Classified based on available data

#### Carcinogenicity

 Classified based on available data

#### Reproductive Toxicity

 Classified based on available data

#### Specific Target Organ Toxicity - Single Exposure

 Classified based on available data

#### Specific Target Organ Toxicity - Repeated Exposure

 Classified based on available data
Aspiration Hazard

Can cause severe burns.

Symptoms / Routes of Exposure

Inhalation: Harmful if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Ingestion: Harmful if swallowed. Irritating to mouth, throat and stomach. Causes burns.

Skin: Causes skin irritation / causes burns.

Eyes: Causes serious eye irritation / causes burns.

Delayed / Immediate Effects: Repeated skin contact with this product may lead to dermatitis while repeated inhalation may cause bronchitis, conjunctivitis, respiratory infections, emphysema and digestive disturbances. May cause erosion and discoloration of the teeth.

Additional Information

Classified based on available data

12. ECOLOGICAL INFORMATION

12.1 Toxicity

This product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

12.2 Persistence and degradability

No data available.

12.3 Bio accumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

No data available.

12.6 Other adverse effects

No data available.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Dispose of waste in accordance to applicable national, regional, or local regulations.

Contaminated Packaging

Dispose in the same manner as unused product.

14. TRANSPORT INFORMATION

Classified according to the criteria of the UN Model Regulations as reflected in the IMDG Code, ADR, RID, DOT and IATA.

14.1 UN-Number

UN2796

14.2 UN proper shipping name

Battery fluid, acid or Sulfuric acid with not more than 51 percent acid

14.3 Transport hazard class(es)

8

14.4 Packaging group

II

14.5 Environmental hazards

This product is not classified as environmentally hazardous according to the UN Model Regulations, nor a marine pollutant according to the IMDG Code.

14.6 Special precautions for users

No data available.

Additional Transport Information

No data available.

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 453/2010.

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

TSCA (Toxic Substances Control Act): On TSCA Inventory
SARA 313: Not applicable.
SARA 311/312: Acute health hazard
CERCLA Reportable Quantity: 1000 lbs.
California Proposition 65:
15.2  Chemical safety assessment

A Chemical Safety Assessment has not been made for this product.

16.  OTHER INFORMATION

Further Information

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This company shall not be held liable for any damage resulting from handling or from contact with the above product. This material must only be handled by suitably qualified experienced scientists in appropriately equipped and authorized facilities. The above information is believed to be correct but does not purport to be all inclusive and should be used as a guide only for experienced personnel. Always consult your safety advisor and follow appropriate local and national safety legislature. The absence of warning must not, under any circumstance, be taken to mean that no hazard exists.

End of safety data sheet.