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

Identification of the substance or preparation

Product name: SYNTEKO 1357
Code: 1357
Chemical name: Urea-formaldehyde resin
Use of the substance/preparation: Wood Adhesives

Company/undertaking identification

Manufacturer: CASCO ADHESIVES (ASIA) PTE LTD
14 Sungei Kadut Way
Singapore 728788, Singapore
Phone: +65 6762 2088

Distributor: CASCO ADHESIVES (ASIA) PTE LTD
14 Sungei Kadut Way
Singapore 728788, Singapore
Phone: +65 6762 2088

E-mail address of person responsible for this SDS: hse.adhesives@akzonobel.com

Emergency telephone number: + 65 6762 2088

2. HAZARDS IDENTIFICATION

The product is classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification: Carc. Cat. 3; R40 R43

Human health hazards: Limited evidence of a carcinogenic effect. May cause sensitisation by skin contact. See section 11 for more detailed information on health effects and symptoms.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/preparation: Preparation

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>CAS number</th>
<th>%</th>
<th>EC number</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>formaldehyde</td>
<td>50-00-0</td>
<td>1-3</td>
<td>200-001-8</td>
<td>Carc. Cat. 3; R40 [1] [2] T; R23/24/25 C; R34 R43</td>
</tr>
</tbody>
</table>

[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit

Occupational exposure limits, if available, are listed in section 8.

4. FIRST AID MEASURES

First-aid measures

Inhalation: Move exposed person to fresh air. Get medical attention if irritation occurs.

Ingestion: Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention.

Skin contact: Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. Wash clothing before reuse. In the event of any complaints or symptoms, avoid further exposure. Get medical attention if irritation develops.

Eye contact: Check for and remove any contact lenses. Rinse with plenty of running water. Get medical attention if irritation occurs.
4. FIRST AID MEASURES
See section 11 for more detailed information on health effects and symptoms.

5. FIRE-FIGHTING MEASURES

Extinguishing media
- Suitable: Use an extinguishing agent suitable for the surrounding fire.
- Special exposure hazards: No specific fire or explosion hazard.
- Hazardous combustion products: Decomposition products may include the following materials:
  - carbon dioxide
  - carbon monoxide
- Special protective equipment for fire-fighters: Be sure to use an approved/certified respirator or equivalent.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Do not touch or walk through spilt material. Do not breathe dust. Avoid contact with eyes, skin and clothing. Use suitable protective equipment (section 8).

Environmental precautions: Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Large spill: Use a shovel to transfer the material to a convenient waste disposal container. Dispose of via a licensed waste disposal contractor.

Small spill: Vacuum or sweep up material and place in a designated, labelled waste container.

7. HANDLING AND STORAGE

Handling: Do not get in eyes or on skin or clothing. Do not breathe dust. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator.

Storage: Keep container tightly closed. Store in a dry, cool and well-ventilated area.

Packaging materials
- Recommended: Use original container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limit values

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Occupational exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>formaldehyde</td>
<td>ACGIH TLV (United States, 1/2007). Skin sensitiser. Notes: Substance identified by other sources as a suspected or confirmed human carcinogen. Refers to Appendix A -- Carcinogens. 2000 Adoption. C: 0,37 mg/m³ C: 0,3 ppm</td>
</tr>
</tbody>
</table>

Exposure controls
- Occupational exposure controls: Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. Use only in well-ventilated areas.
- Hygiene measures: Ensure that eyewash stations and safety showers are close to the workstation location. Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Wash contaminated clothing before reusing.
- Respiratory protection: If dust is generated and ventilation is inadequate, use respirator that will protect against dust/mist. Type A2/P2.
- Eye protection: Safety glasses.
- Skin protection: Protective clothing.

Date of issue/Date of revision: 2009-11-03.
9. PHYSICAL AND CHEMICAL PROPERTIES

**General information**

**Appearance**
- Physical state: Solid.
- Colour: White.
- Odour: Faint odour.

**Important health, safety and environmental information**

**pH**
- 8 to 9 [Conc. (% w/w): 50%]

**Flash point**
- Closed cup: >200°C (>392°F)

**Density**
- 0.6 g/cm³

**Solubility**
- Soluble in the following materials: cold water and hot water.

10. STABILITY AND REACTIVITY

**Stability**
- The product is stable.

**Conditions to avoid**
- No specific data.

**Materials to avoid**
- No specific data.

**Hazardous decomposition products**
- Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. TOXICOLOGICAL INFORMATION

**Potential acute health effects**

**Inhalation**
- Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

**Ingestion**
- None.

**Skin contact**
- May cause sensitisation by skin contact.

**Eye contact**
- Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

**Acute toxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>formaldehyde</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>100 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

**Potential chronic health effects**

**Chronic effects**
- Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

**Carcinogenicity**
- May cause cancer, based on animal data. Limited evidence of a carcinogenic effect. Risk of cancer depends on duration and level of exposure.

**Mutagenicity**
- No known significant effects or critical hazards.

**Teratogenicity**
- No known significant effects or critical hazards.

**Developmental effects**
- No known significant effects or critical hazards.

**Fertility effects**
- No known significant effects or critical hazards.

**Over-exposure signs/symptoms**

**Inhalation**
- Adverse symptoms may include the following: respiratory tract irritation, coughing

**Ingestion**
- No specific data.

**Skin**
- Adverse symptoms may include the following: irritation, redness

**Eyes**
- Adverse symptoms may include the following: irritation, redness

**Target organs**
- Contains material which may cause damage to the following organs: mucous membranes, upper respiratory tract, skin, eye, lens or cornea.

**Other adverse effects**
- The product contains small amounts of unreacted formaldehyde, which may be given off by curing. Formaldehyde vapor may be irritating to respiratory tract.

Date of issue/Date of revision: 2009-11-03.
12. **ECOLOGICAL INFORMATION**

**Aquatic ecotoxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>formaldehyde</td>
<td>Acute EC50 5800 to 7800</td>
<td>Daphnia - Daphnia pulex</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 1,41 ppm</td>
<td>Fish - Oncorhynchus mykiss</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

**Conclusion/Summary**: No known significant effects or critical hazards.

**Biodegradability**

**Conclusion/Summary**: No known significant effects or critical hazards.

13. **DISPOSAL CONSIDERATIONS**

**Methods of disposal**: The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

**European waste catalogue (EWC)**: 08 04 09

80 04 09* waste adhesives and sealants containing organic solvents or other dangerous substances

**Hazardous waste**: Yes.

14. **TRANSPORT INFORMATION**

**International transport regulations**

<table>
<thead>
<tr>
<th>Regulatory information</th>
<th>UN number</th>
<th>Proper shipping name</th>
<th>Classes</th>
<th>PG*</th>
<th>Label</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR/RID Class</td>
<td>Not regulated.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>IMDG Class</td>
<td>Not regulated.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>IATA Class</td>
<td>Not regulated.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

PG*: Packing group

15. **REGULATORY INFORMATION**

**EU regulations**

Classification and labeling have been determined according to EU Directives 67/548/EEC and 1999/45/EC (including amendments) and take into account the intended product use.

**Hazard symbol or symbols**:

[![Harmful](image)](image)

**Risk phrases**: R40- Limited evidence of a carcinogenic effect. R43- May cause sensitisation by skin contact.

**Safety phrases**: S36/37- Wear suitable protective clothing and gloves.

**Contains**: formaldehyde 200-001-8

**Product use**: Industrial applications.
## 16. OTHER INFORMATION

### Full text of R-phrases referred to in sections 2 and 3 - Europe
- R40- Limited evidence of a carcinogenic effect.
- R23/24/25- Toxic by inhalation, in contact with skin and if swallowed.
- R34- Causes burns.
- R43- May cause sensitisation by skin contact.

### Full text of classifications referred to in sections 2 and 3 - Europe
- Carc. Cat. 3 - Carcinogen category 3
- T - Toxic
- C - Corrosive

### History
- **Date of issue/Date of revision**: 2009-11-03.
- **Date of previous issue**: 2009-10-29.
- **Version**: 2.04
- **Prepared by**: Kristofer Modin

*Indicates information that has changed from previously issued version.*
SAFETY DATA SHEET

HARDENER 2732

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

Identification of the substance or preparation

Product name : HARDENER 2732
Code : 2732
Use of the substance/preparation : Hardener

Company/undertaking identification

Manufacturer : CASCO ADHESIVES (ASIA) PTE LTD
14 Sungei Kadut Way
Singapore 728788, Singapore
Phone: +65 6762 2088

Distributor : CASCO ADHESIVES (ASIA) PTE LTD
14 Sungei Kadut Way
Singapore 728788, Singapore
Phone: +65 6762 2088

E-mail address of person responsible for this SDS : hse.adhesives@akzonobel.com

Emergency telephone number : + 65 6762 2088

2. HAZARDS IDENTIFICATION

The product is classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification : Xi; R36
Human health hazards : Irritating to eyes.

See section 11 for more detailed information on health effects and symptoms.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substance/preparation</th>
<th>Preparation</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>CAS number</th>
<th>%</th>
<th>EC number</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>ammonium chloride</td>
<td>12125-02-9</td>
<td>10-25</td>
<td>235-186-4</td>
<td>[1] Xn; R22</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>[2] Xi; R36</td>
</tr>
</tbody>
</table>

See section 16 for the full text of the R-phrases declared above

[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit

Occupational exposure limits, if available, are listed in section 8.

4. FIRST AID MEASURES

First-aid measures

Inhalation : Move exposed person to fresh air. Get medical attention if irritation occurs.

Ingestion : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if adverse health effects persist or are severe.

Skin contact : Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. Get medical attention if irritation develops.

Eye contact : Check for and remove any contact lenses. Rinse with plenty of running water. Get medical attention.

See section 11 for more detailed information on health effects and symptoms.

Date of issue/Date of revision : 2009-11-30.
5. **FIRE-FIGHTING MEASURES**

**Extinguishing media**
- Suitable: Use dry chemical, CO₂, water spray (fog) or foam.
- Special exposure hazards: No specific fire or explosion hazard.
- Hazardous combustion products: Decomposition products may include the following materials:
  - sulfur oxides
  - metal oxide/oxides
- Special protective equipment for fire-fighters: Be sure to use an approved/certified respirator or equivalent.

6. **ACCIDENTAL RELEASE MEASURES**

**Personal precautions**
- Do not touch or walk through spilt material. Avoid contact with eyes, skin and clothing. Use suitable protective equipment (section 8).

**Environmental precautions**
- Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

**Large spill**
- Use a shovel to transfer the material to a convenient waste disposal container. Dispose of via a licensed waste disposal contractor.

**Small spill**
- Vacuum or sweep up material and place in a designated, labelled waste container.

7. **HANDLING AND STORAGE**

**Handling**
- Avoid contact with eyes, skin and clothing.

**Storage**
- Keep container tightly closed. Store in a dry, cool and well-ventilated area.

**Packaging materials**
- Recommended: Use original container.

8. **EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Exposure limit values**

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Occupational exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>calcium sulfate</td>
<td>ACGIH TLV (United States, 1/2007). Notes: Inhalable fraction. See Appendix C, paragraph A. Inhalable Particulate Mass TLVs (IPM–TLVs) for those materials that are hazardous when deposited anywhere in the respiratory tract. TWA: 10 mg/m³ 8 hours. Form: Inhalable fraction</td>
</tr>
<tr>
<td>ammonium chloride</td>
<td>ACGIH TLV (United States, 1/2007). TWA: 10 mg/m³ 8 hours. Form: Fume STEL: 20 mg/m³ 15 minutes. Form: Fume</td>
</tr>
</tbody>
</table>

**Exposure controls**

| Occupational exposure controls | Workplace controls for this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits. |
| Hygiene measures               | Ensure that eyewash stations and safety showers are close to the workstation location. Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Wash contaminated clothing before reusing. |
| Respiratory protection         | If dust is generated and ventilation is inadequate, use respirator that will protect against dust/mist. |
| Hand protection                | Gloves. |
| Eye protection                 | Tightly-fitting goggles |
| Skin protection                | Protective clothing. |

Date of issue/Date of revision: 2009-11-30.
9. PHYSICAL AND CHEMICAL PROPERTIES

General information

Appearance

Physical state : Solid. [Powder.]
Colour : White.
Odour : Paint odour.

Important health, safety and environmental information

Density : 1 g/cm³
Solubility : Miscible in water.

10. STABILITY AND REACTIVITY

Stability : The product is stable.
Conditions to avoid : No specific data.
Materials to avoid : No specific data.
Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. TOXICOLOGICAL INFORMATION

Potential acute health effects

Inhalation : None.
Ingestion : None.
Skin contact : None.
Eye contact : Irritating to eyes.

Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium chloride</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>1650 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

Potential chronic health effects

Chronic effects : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Inhalation : No specific data.
Ingestion : No specific data.
Skin : No specific data.
Eyes : Adverse symptoms may include the following:
  - irritation
  - watering
  - redness

Target organs : Contains material which may cause damage to the following organs: upper respiratory tract, skin, eye, lens or cornea.

12. ECOLOGICAL INFORMATION

Environmental effects : There is no data available on the preparation itself.

Aquatic ecotoxicity

Conclusion/Summary : No known significant effects or critical hazards.

Biodegradability

Conclusion/Summary : No known significant effects or critical hazards.

Date of issue/Date of revision : 2009-11-30.
13. DISPOSAL CONSIDERATIONS

Methods of disposal: The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

European waste catalogue (EWC): 08 04 09

Hazardous waste: Yes.

08 04 09* waste adhesives and sealants containing organic solvents or other dangerous substances

14. TRANSPORT INFORMATION

International transport regulations

<table>
<thead>
<tr>
<th>Regulatory information</th>
<th>UN number</th>
<th>Proper shipping name</th>
<th>Classes</th>
<th>PG*</th>
<th>Label</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR/RID Class</td>
<td>Not regulated.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
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<tr>
<td>IMDG Class</td>
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<td>-</td>
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<td></td>
</tr>
<tr>
<td>IATA Class</td>
<td>Not regulated.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

PG* : Packing group

15. REGULATORY INFORMATION

EU regulations
Classification and labeling have been determined according to EU Directives 67/548/EEC and 1999/45/EC (including amendments) and take into account the intended product use.

Hazard symbol or symbols:

Risk phrases: R36- Irritating to eyes.

Product use: Industrial applications.

16. OTHER INFORMATION

Full text of R-phrases referred to in sections 2 and 3 - Europe: R22- Harmful if swallowed. R36- Irritating to eyes.

Full text of classifications referred to in sections 2 and 3 - Europe: Xn - Harmful Xi - Irritant

History
Date of issue/Date of revision: 2009-11-30.
Date of previous issue: 2007-11-12.
Version: 1.01
Prepared by: Mikael Olsson

Indicates information that has changed from previously issued version.
1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Identification of the substance or preparation
Product name : MODIFIER 2731A
Code : 2731A
Use of the substance/preparation : Additive

Company/undertaking identification
Manufacturer : CASCO ADHESIVES (ASIA) PTE LTD
14 Sungei Kadut Way
Singapore 728788, Singapore
Phone: +65 6762 2088

Distributor : CASCO ADHESIVES (ASIA) PTE LTD
14 Sungei Kadut Way
Singapore 728788, Singapore
Phone: +65 6762 2088

E-mail address of person responsible for this SDS : hse.adhesives@akzonobel.com
Emergency telephone number : +65 6762 2088

2. HAZARDS IDENTIFICATION

The product is not classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification : Not classified.
See section 11 for more detailed information on health effects and symptoms.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substance/preparation</th>
<th>Preparation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingredient name</td>
<td>CAS number</td>
</tr>
<tr>
<td>calcium sulfate</td>
<td>[2]</td>
</tr>
</tbody>
</table>

[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit

Occupational exposure limits, if available, are listed in section 8.

4. FIRST AID MEASURES

First-aid measures
Inhalation : Move exposed person to fresh air. Get medical attention if irritation occurs.
Ingestion  : Wash out mouth with water. Get medical attention if symptoms appear.
Skin contact : Wash contaminated skin with soap and water. Get medical attention if irritation develops.
Eye contact : Check for and remove any contact lenses. Rinse with plenty of running water. Get medical attention if irritation occurs.

See section 11 for more detailed information on health effects and symptoms.

Date of issue/Date of revision : 2009-11-05.
5. **FIRE-FIGHTING MEASURES**

**Extinguishing media**
- **Suitable**: Use an extinguishing agent suitable for the surrounding fire.

**Special exposure hazards**
- **No specific fire or explosion hazard.**

**Hazardous combustion products**
- **Decomposition products may include the following materials:**
  - sulfur oxides
  - metal oxide/oxides

**Special protective equipment for fire-fighters**
- **Be sure to use an approved/certified respirator or equivalent.**

6. **ACCIDENTAL RELEASE MEASURES**

**Personal precautions**
- **Use suitable protective equipment (section 8).**

**Environmental precautions**
- **Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.**

**Large spill**
- **Use a shovel to transfer the material to a convenient waste disposal container.**

**Small spill**
- **Vacuum or sweep up material and place in a designated, labelled waste container.**

7. **HANDLING AND STORAGE**

**Handling**
- **Avoid contact with eyes, skin and clothing. Do not breathe dust.**

**Storage**
- **Keep container tightly closed. Store in a dry, cool and well-ventilated area.**

**Packaging materials**
- **Recommended**: Use original container.

8. **EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Exposure limit values**

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Occupational exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>kaolin</strong></td>
<td>ACGIH TLV (United States, 1/2007). Notes: 1996 Adoption \ Refers to Appendix A -- Carcinogens. Respirable fraction; see Appendix C, paragraph C. \ TWA: 2 mg/m³ 8 hours. Form: Respirable fraction</td>
</tr>
<tr>
<td><strong>calcium sulfate</strong></td>
<td>ACGIH TLV (United States, 1/2007). Notes: Inhalable fraction. \ See Appendix C, paragraph A. Inhalable Particulate Mass TLVs (IPM–TLVs) for those materials that are hazardous when deposited anywhere in the respiratory tract. \ TWA: 10 mg/m³ 8 hours. Form: Inhalable fraction</td>
</tr>
</tbody>
</table>

**Exposure controls**
- **Occupational exposure controls**: If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

**Hygiene measures**: Ensure that eyewash stations and safety showers are close to the workstation location. Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.

**Respiratory protection**: Dust-protection mask.

**Hand protection**: Gloves.

**Eye protection**: Safety glasses.

**Skin protection**: No special protection is required.

9. **PHYSICAL AND CHEMICAL PROPERTIES**

**General information**

**Appearance**
- **Physical state**: Solid.
- **Colour**: White.
- **Odour**: Faint odour.

**Important health, safety and environmental information**
- **Density**: 0.8 g/cm³
9. PHYSICAL AND CHEMICAL PROPERTIES

Solubility: Easily soluble in the following materials: cold water.

10. STABILITY AND REACTIVITY

Stability: The product is stable.
Conditions to avoid: No specific data.
Materials to avoid: No specific data.
Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. TOXICOLOGICAL INFORMATION

Potential acute health effects
Inhalation: Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
Ingestion: None.
Skin contact: None.
Eye contact: Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

Potential chronic health effects
Chronic effects: Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.
Carcinogenicity: No known significant effects or critical hazards.
Mutagenicity: No known significant effects or critical hazards.
Teratogenicity: No known significant effects or critical hazards.
Developmental effects: No known significant effects or critical hazards.
Fertility effects: No known significant effects or critical hazards.

Over-exposure signs/symptoms
Inhalation: Adverse symptoms may include the following:
respiratory tract irritation
  coughing
Ingestion: No specific data.
Skin: No specific data.
Eyes: Adverse symptoms may include the following:
  irritation
  redness

Target organs: Contains material which may cause damage to the following organs: upper respiratory tract, skin, eye, lens or cornea.

12. ECOLOGICAL INFORMATION

Environmental effects: There is no data available on the preparation itself.
Aquatic ecotoxicity: No known significant effects or critical hazards.
Conclusion/Summary: No known significant effects or critical hazards.
Biodegradability: No known significant effects or critical hazards.
Conclusion/Summary: No known significant effects or critical hazards.

13. DISPOSAL CONSIDERATIONS

Methods of disposal: The generation of waste should be avoided or minimised wherever possible. The product is not regarded as hazardous waste. Disposal should be in accordance with applicable regional, national and local laws and regulations.
European waste catalogue (EWC): 08 04 10
  08 04 10 waste adhesives and sealants other than those mentioned in 08 04 09
Hazardous waste: No.

Date of issue/Date of revision: 2009-11-05.
14. TRANSPORT INFORMATION

International transport regulations

<table>
<thead>
<tr>
<th>Regulatory information</th>
<th>UN number</th>
<th>Proper shipping name</th>
<th>Classes</th>
<th>PG*</th>
<th>Label</th>
<th>Additional information</th>
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</thead>
<tbody>
<tr>
<td>ADR/RID Class</td>
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PG*: Packing group

15. REGULATORY INFORMATION

EU regulations

Classification and labeling have been determined according to EU Directives 67/548/EEC and 1999/45/EC (including amendments) and take into account the intended product use.

Risk phrases: This product is not classified according to EU legislation.

Product use: Industrial applications.

Other EU regulations

16. OTHER INFORMATION

History

Date of issue/Date of revision: 2009-11-05.

Date of previous issue: No previous validation.

Version: 1.01

Prepared by: Mikael Olsson

Indicates information that has changed from previously issued version.
1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Identification of the substance or preparation
- **Product name**: HARDENER 0556
- **Code**: 0556
- **Use of the substance/preparation**: Hardener

Company/undertaking identification
- **Manufacturer**: CASCO ADHESIVES (ASIA) PTE LTD
  14 Sungei Kadut Way
  Singapore 728788, Singapore
  Phone: +65 6762 2088
- **Distributor**: CASCO ADHESIVES (ASIA) PTE LTD
  14 Sungei Kadut Way
  Singapore 728788, Singapore
  Phone: +65 6762 2088

E-mail address of person responsible for this SDS: hse.adhesives@akzonobel.com

Emergency telephone number: +65 6762 2088

2. HAZARDS IDENTIFICATION

The product is not classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification: Not classified.

See section 11 for more detailed information on health effects and symptoms.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>CAS number</th>
<th>%</th>
<th>EC number</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>ammonium chloride</td>
<td>12125-02-9</td>
<td>5-10</td>
<td>235-186-4</td>
<td>Xn; R22 Xi; R36</td>
</tr>
<tr>
<td>kaolin</td>
<td>1332-58-7</td>
<td>5-10</td>
<td>310-194-1</td>
<td>Not classified.</td>
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<tr>
<td>Total</td>
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</tbody>
</table>

See section 16 for the full text of the R-phrases declared above.

[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit

Occupational exposure limits, if available, are listed in section 8.

4. FIRST AID MEASURES

First-aid measures
- **Inhalation**: Move exposed person to fresh air. Get medical attention if irritation occurs.
- **Ingestion**: Wash out mouth with water. Get medical attention if symptoms appear.
- **Skin contact**: Wash contaminated skin with soap and water. Get medical attention if irritation develops.
- **Eye contact**: Check for and remove any contact lenses. Rinse with plenty of running water. Get medical attention if irritation occurs.

See section 11 for more detailed information on health effects and symptoms.

Date of issue/Date of revision: 2009-12-10.
5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable: Use an extinguishing agent suitable for the surrounding fire.

Special exposure hazards: No specific fire or explosion hazard.

Hazardous combustion products: Decomposition products may include the following materials:
- Carbon dioxide
- Carbon monoxide
- Nitrogen oxides
- Metal oxide/oxides

Special protective equipment for fire-fighters: Be sure to use an approved/certified respirator or equivalent.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Use suitable protective equipment (section 8).

Environmental precautions: Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Large spill: Use a shovel to transfer the material to a convenient waste disposal container.

Small spill: Vacuum or sweep up material and place in a designated, labelled waste container.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Do not breathe dust.

Storage: Keep container tightly closed. Store in a dry, cool and well-ventilated area.

Packaging materials

Recommended: Use original container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limit values

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Occupational exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ammonium chloride</td>
<td>ACGIH TLV (United States, 1/2007). TWA: 10 mg/m³ 8 hours. Form: Fume</td>
</tr>
<tr>
<td></td>
<td>STEL: 20 mg/m³ 15 minutes. Form: Fume</td>
</tr>
<tr>
<td>kaolin</td>
<td>ACGIH TLV (United States, 1/2007). Notes: 1996 Adoption Refers to Appendix A -- Carcinogens. Respirable fraction; see Appendix C, paragraph C. TWA: 2 mg/m³ 8 hours. Form: Respirable fraction</td>
</tr>
</tbody>
</table>

Exposure controls

Occupational exposure controls: If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Hygiene measures: Ensure that eyewash stations and safety showers are close to the workstation location. Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.

Respiratory protection: Dust-protection mask.

Hand protection: Gloves.

Eye protection: Safety glasses.

Skin protection: No special protection is required.

9. PHYSICAL AND CHEMICAL PROPERTIES

General information

Appearance

Physical state: Solid. [Powder.]

Colour: Beige. [Light]

Important health, safety and environmental information

Density: 1.2 g/cm³
10. STABILITY AND REACTIVITY

Stability : The product is stable.
Conditions to avoid : No specific data.
Materials to avoid : No specific data.
Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. TOXICOLOGICAL INFORMATION

Potential acute health effects
Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
Ingestion : None.
Skin contact : None.
Eye contact : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>ammonium chloride</td>
<td>LD50</td>
<td>Rat</td>
<td>1650 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

Potential chronic health effects

Chronic effects : Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Over-exposure signs/symptoms

| Inhalation | : Adverse symptoms may include the following: respiratory tract irritation coughing |
| Ingestion  | : No specific data. |
| Skin       | : No specific data. |
| Eyes       | : Adverse symptoms may include the following: irritation redness |

Target organs : Contains material which may cause damage to the following organs: upper respiratory tract, skin, eye, lens or cornea.

12. ECOLOGICAL INFORMATION

Environmental effects : There is no data available on the preparation itself.
Aquatic ecotoxicity : 
Conclusion/Summary : No known significant effects or critical hazards.
Biodegradability : 
Conclusion/Summary : No known significant effects or critical hazards.

13. DISPOSAL CONSIDERATIONS

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. The product is not regarded as hazardous waste. Disposal should be in accordance with applicable regional, national and local laws and regulations.
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Risk phrases : This product is not classified according to EU legislation.
Product use : Industrial applications.

16. OTHER INFORMATION

Full text of R-phrases referred to in sections 2 and 3 - Europe : R22- Harmful if swallowed.
R36- Irritating to eyes.

Full text of classifications referred to in sections 2 and 3 - Europe : Xn - Harmful
Xi - Irritant

History

Date of issue/Date of revision : 2009-12-10.
Date of previous issue : No previous validation.
Version : 1
Prepared by : Mikael Olsson

 Indicates information that has changed from previously issued version.