SAFETY DATA SHEET

Based on Directive 2001/58/EC of the Commission of the European Communities

EPDM BONDING ADHESIVE BA-2004(T)

1. Identification of the substance/preparation and of the company/undertaking

1.1 Identification of the substance or preparation:

Product name: EPDM BONDING ADHESIVE BA-2004(T)

Synonyms: none

CAS No. : N.A.
EC index No. : N.A.
EINECS No. : N.A.
RTECS No. : N.A.

1.2 Use of the substance or the preparation:

Adhesive

1.3 Company/undertaking identification:

Firestone Building Products
Ikaroslaan 75
B-1930 Zaventem
Tel. : +32 2 711 44 50
Fax : +32 2 721 27 18
Email: info@fbpe.be

1.4 Telephone number for emergency:

+32 70 245 245
Poison Centre
p/a Militair Hospitaal Koningin Astrid, Bruynstraat 1, B-1120 Brussel

2. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Hazardous ingredients</th>
<th>CAS No.</th>
<th>Conc. in %</th>
<th>Hazard symbol</th>
<th>Risks (R-phrases)</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-hexane</td>
<td>110-54-3</td>
<td>50-75</td>
<td>F;Xn;N</td>
<td>11-38-48/20-51/53-62-65-67 (1)</td>
</tr>
<tr>
<td></td>
<td>203-777-6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>toluene</td>
<td>108-88-3</td>
<td>5-20</td>
<td>F;Xn</td>
<td>11-38-48/20-63-65-67 (1)</td>
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<tr>
<td></td>
<td>203-625-9</td>
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</tbody>
</table>

(1) For R-phrases in full: see heading 16

3. Hazards identification

- Highly flammable
- Irritating to skin
- Harmful: danger of serious damage to health by prolonged exposure through inhalation
- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
- Possible risk of impaired fertility
- Possible risk of harm to the unborn child
- Vapours may cause dizziness and dizziness

4. First aid measures

4.1 Eye contact:
- Consult a doctor/medical service if irritation persists
- Rinse immediately with plenty of water
EPDM BONDING ADHESIVE BA-2004(T)

4.2 Skin contact:
- Consult a doctor/medical service if irritation persists
- Soap may be used
- Wash immediately with lots of water

4.3 After inhalation:
- Consult a doctor/medical service if breathing problems develop
- Remove the victim into fresh air
- Unconscious: maintain adequate airway and respiration

4.4 After ingestion:
- Consult a doctor/medical service if you feel unwell
- Never give water to an unconscious person
- Do not induce vomiting

5. Fire-fighting measures

5.1 Suitable extinguishing media:
- Water spray
- Polyvalent foam
- BC powder
- Carbon dioxide

5.2 Unsuitable extinguishing media:
- Solid water jet ineffective as extinguishing medium

5.3 Special exposure hazards:
- Gas/vapour spreads at floor level: ignition hazard
- May build up electrostatic charges: risk of ignition
- Upon combustion CO and CO2 are formed

5.4 Instructions:
- If exposed to fire cool the closed containers by spraying with water
- Take account of environmentally hazardous firefighting water
- Use firefighting water moderately and contain it

5.5 Special protective equipment for firefighters:
- Heat/fire exposure: compressed air/oxygen apparatus
- Large spills/in enclosed spaces: compressed air apparatus

6. Accidental release measures

6.1 Personal protection/precautions:
See heading 8.2/13

6.2 Environmental precautions:
- Prevent soil and water pollution
- Prevent spreading in sewers
- Contain leaking substance
- Dam up the liquid spill
- Try to reduce evaporation

6.3 Methods for cleaning up:
- Take up liquid spill into inert absorbent material, e.g.: sand/earth
- Scoop absorbed substance into closing containers
- Carefully collect the spill/leftovers
- Do not use compressed air for pumping over spills
- Clean contaminated surfaces with an excess of water
- Wash clothing and equipment after handling
- Take collected spill to manufacturer/competent authority

7. Handling and storage

7.1 Handling:
- Observe strict hygiene
- Use spark/explosionproof appliances and lighting system
- Take precautions against electrostatic charges
- Handle uncleaned empty containers as full ones
- Do not discharge the waste into the drain
7.2 Storage:
- Keep container tightly closed
- Ventilation at floor level
- Provide for a tap to collect spills
- Meet the legal requirements
- Keep away from: heat sources, ignition sources, oxidizing agents, acids, bases

| Storage temperature | : N.D. °C |
| Storage life | : N.D. days |
| Materials for packaging | : |
| - suitable | : no data available |
| - to avoid | : no data available |

7.3 Specific uses:
- See information supplied by the manufacturer

8. Exposure controls/Personal protection

8.1 Exposure limit values:

**n-hexane**

<table>
<thead>
<tr>
<th></th>
<th>mg/m³</th>
<th>ppm</th>
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</thead>
<tbody>
<tr>
<td>TLV-TWA</td>
<td></td>
<td>50</td>
</tr>
<tr>
<td>TLV-STE</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>WEL-LTEL</td>
<td>72</td>
<td>20</td>
</tr>
<tr>
<td>WEL-STE</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>MAK</td>
<td>180</td>
<td>50</td>
</tr>
<tr>
<td>TRGS900</td>
<td>180</td>
<td>50</td>
</tr>
<tr>
<td>MAC-TGG 8 h</td>
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</tr>
<tr>
<td>MAC-TGG 15 min.</td>
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<td></td>
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<tr>
<td>VME-8 h</td>
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<td>50</td>
</tr>
<tr>
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<td>-</td>
</tr>
<tr>
<td>GWBB-8 h</td>
<td>179</td>
<td>50</td>
</tr>
<tr>
<td>GWK-15 min.</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Momentary value</td>
<td></td>
<td>ppm</td>
</tr>
<tr>
<td>EC</td>
<td>72</td>
<td>20</td>
</tr>
<tr>
<td>EC-STE</td>
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<td>ppm</td>
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</table>

**toluene**

<table>
<thead>
<tr>
<th></th>
<th>mg/m³</th>
<th>ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLV-TWA</td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>TLV-STE</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>WEL-LTEL</td>
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<td>50</td>
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<tr>
<td>WEL-STE</td>
<td>574</td>
<td>150</td>
</tr>
<tr>
<td>MAK</td>
<td>190</td>
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<td>TRGS900</td>
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<td>50</td>
</tr>
<tr>
<td>MAC-TGG 8 h</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>MAC-TGG 15 min.</td>
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<td>150</td>
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<tr>
<td>GWBB-8 h</td>
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<td>50</td>
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<tr>
<td>GWK-15 min.</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Momentary value</td>
<td></td>
<td>ppm</td>
</tr>
<tr>
<td>EC</td>
<td>192</td>
<td>50</td>
</tr>
<tr>
<td>EC-STE</td>
<td></td>
<td>ppm</td>
</tr>
</tbody>
</table>
EPDM BONDING ADHESIVE BA-2004(T)

Sampling methods:
- n-Hexane (Hydrocarbons, BP36 to 126°C) NIOSH 1500
- n-Hexane OSHA 7
- Toluene (Hydrocarbons, aromatic) NIOSH 4000
- Toluene NIOSH 1500
- Toluene OSHA 07
- Toluene OSHA CSI

8.2 Exposure controls:

8.2.1 Occupational exposure controls:
- Measure the concentration in the air regularly
- Work under local exhaust/ventilation

8.2.1.1 respiratory protection:
- High vapour concentration: gas mask with filter A

8.2.1.2 hand protection:
- Gloves
  Suitable materials: No data available
  Breakthrough time: N.D.

8.2.1.3 eye protection:
- Protective goggles

8.2.1.4 skin protection:
- Head/neck protection
- Protective clothing
  Suitable materials: No data available

8.2.2 Environmental exposure controls: see heading 13

9. Physical and chemical properties

9.1 General information:
  Appearance (at 20°C) : Liquid
  Odour : Aromatic
  Colour : Yellow to green

9.2 Important health, safety and environmental information:
  pH value : N.D.
  Boiling point/boiling range : 65/110 °C
  Flashpoint : 0 °C
  Explosion limits : 1.1/7.5 vol% ( °C)
  Vapour pressure (at 20°C) : 49/133 hPa
  Vapour pressure (at 50°C) : N.D. hPa
  Relative density (at 20°C) : 0.79/0.89
  Water solubility : Insoluble
  Soluble in : N.D.
  Relative vapour density : > 3.0
  Viscosity : N.D. Pa.s
  Partition coefficient n-octanol/water : N.D.
  Evaporation rate ratio to butyl acetate : N.D.
  ratio to ether : N.D.
  Melting point/melting range : N.D. °C
  Auto-ignition point : N.D. °C
  Saturation concentration : N.D. g/m³
10. Stability and reactivity

10.1 Conditions to avoid/reactivity:
- Stable under normal conditions

10.2 Materials to avoid:
- Keep away from: heat sources, ignition sources, oxidizing agents, acids, bases

10.3 Hazardous decomposition products:
- Upon combustion CO and CO2 are formed

11. Toxicological information

11.1 Acute toxicity:

<table>
<thead>
<tr>
<th>LD50</th>
<th>Oral rat</th>
<th>N.D.</th>
<th>mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50</td>
<td>Dermal rat</td>
<td>N.D.</td>
<td>mg/kg</td>
</tr>
<tr>
<td>LD50</td>
<td>Dermal rabbit</td>
<td>N.D.</td>
<td>mg/kg</td>
</tr>
<tr>
<td>LC50</td>
<td>Inhalation rat</td>
<td>N.D.</td>
<td>mg/1/4 h</td>
</tr>
<tr>
<td>LC50</td>
<td>Inhalation rat</td>
<td>N.D.</td>
<td>ppm/4 h</td>
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</table>

11.2 Chronic toxicity:

<table>
<thead>
<tr>
<th>Category</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC carc. cat.</td>
<td>Not listed</td>
</tr>
<tr>
<td>EC muta. cat.</td>
<td>Not listed</td>
</tr>
<tr>
<td>EC repr. cat.</td>
<td>3 (n-hexane) (toluene)</td>
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<tr>
<td>Carcinogenicity (TLV)</td>
<td>A4 (toluene)</td>
</tr>
<tr>
<td>Carcinogenicity (MAC)</td>
<td>Not listed</td>
</tr>
<tr>
<td>Carcinogenicity (VME)</td>
<td>Not listed</td>
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<tr>
<td>Carcinogenicity (GWBB)</td>
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<tr>
<td>Carcinogenicity (MAK)</td>
<td>Not listed</td>
</tr>
<tr>
<td>Mutagenicity (MAK)</td>
<td>Not listed</td>
</tr>
<tr>
<td>Teratogenicity (MAK)</td>
<td>C (n-hexane) (toluene)</td>
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<tr>
<td>IARC classification</td>
<td>3 (toluene)</td>
</tr>
</tbody>
</table>

11.3 Routes of exposure: ingestion, inhalation, eyes and skin
Caution! Substance is absorbed through the skin

11.4 Acute effects/symptoms:

- AFTER INHALATION
- EXPOSURE TO HIGH CONCENTRATIONS:
  - Headache
  - Nausea
  - Irritation of the respiratory tract
  - Irritation of the nasal mucous membranes
  - Feeling of weakness
  - Dizziness
  - CNS depression
  - Narcosis
  - Mental confusion
  - Drunkenness
  - Coordination disorders
  - Disturbed motor response
  - Disturbances of consciousness
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- **AFTER INGESTION**
  - Risk of aspiration pneumonia
  - Nausea
  - Abdominal pain
  - CNS depression
  - Symptoms similar to those listed under inhalation

- **AFTER SKIN CONTACT**
  - Tingling/irritation of the skin

- **AFTER EYE CONTACT**
  - Irritation of the eye tissue

11.5 **Chronic effects:**

- Possible risk of impaired fertility
- Possibly hazardous to the foetus
- Prolonged exposure: danger of damage to health through inhalation
- Causes damage to the central nervous system
- Not listed in carcinogenicity class (IARC,EC,TLV,MAK)
- Not listed in mutagenicity class (EC,MAK)
- ON CONTINUOUS/REPEATED EXPOSURE/CONTACT:
  - Dry skin
  - Skin rash/inflammation
  - Impairment of the nervous system
  - Tremor
  - Impaired memory
  - Impaired concentration
  - Brain affection
  - Disturbances of heart rate
  - Change in the haemogramme/blood composition
  - Movement disturbances
  - Myasthenia
  - Cramps/uncontrolled muscular contractions
  - Paralysis

12. **Ecological information**

12.1 **Ecotoxicity:**

- n-hexane:
  - LC₅₀ (96 h) : 113 mg/l (TILAPIA MOSAMBICA)
  - EC₅₀ (48 h) : 2.1 mg/l (DAPHNIA MAGNA)
  - EC₅₀ (h) : 114 mg/l (CHLOROPHYTA)

12.2 **Mobility:**

- Volatile organic compounds (VOC): 55/95%
- Insoluble in water

For other physicochemical properties see heading 9

12.3 **Persistence and degradability:**

- biodegradation BOD₅ : N.D. % ThOD
- water : No data available
- soil : T ½: N.D. days

12.4 **Bioaccumulative potential:**

- log Pₐw : N.D.
- BCF : N.D.
12.5 Other adverse effects:

- **WGK**: 2  
  (Classification based on the components in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 17 May 1999)

- **Effect on the ozone layer**: Not dangerous for the ozone layer (1999/45/EC)

- **Greenhouse effect**: no data available

- **Effect on waste water purification**: no data available

13. Disposal considerations

13.1 Provisions relating to waste:
- Hazardous waste (91/689/EEC)

13.2 Disposal methods:
- Incinerate under surveillance
- Do not discharge into drains or the environment

13.3 Packaging/Container:
14. Transport information

14.1 Classification of the substance in compliance with UN Recommendations

<table>
<thead>
<tr>
<th>UN number</th>
<th>CLASS</th>
<th>SUB RISKS</th>
<th>PACKING</th>
<th>PROPER SHIPPING NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1133</td>
<td>3</td>
<td>-</td>
<td>II</td>
<td>UN 1133, Adhesives, Special provision 640D</td>
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</table>

14.2 ADR (transport by road)

<table>
<thead>
<tr>
<th>CLASS</th>
<th>PACKING</th>
<th>CLASSIFICATION CODE</th>
<th>DANGER LABEL TANKS</th>
<th>DANGER LABEL PACKAGES</th>
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<tbody>
<tr>
<td>3</td>
<td>II</td>
<td>F1</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

14.3 RID (transport by rail)

<table>
<thead>
<tr>
<th>CLASS</th>
<th>PACKING</th>
<th>CLASSIFICATION CODE</th>
<th>DANGER LABEL TANKS</th>
<th>DANGER LABEL PACKAGES</th>
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</thead>
<tbody>
<tr>
<td>3</td>
<td>II</td>
<td>F1</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

14.4 ADNR (transport by inland waterways)

<table>
<thead>
<tr>
<th>CLASS</th>
<th>PACKING</th>
<th>CLASSIFICATION CODE</th>
<th>DANGER LABEL TANKS</th>
<th>DANGER LABEL PACKAGES</th>
</tr>
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<tbody>
<tr>
<td>3</td>
<td>II</td>
<td>F1</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

14.5 IMDG (maritime transport)

<table>
<thead>
<tr>
<th>CLASS</th>
<th>SUB RISKS</th>
<th>PACKING</th>
<th>MFAG</th>
<th>EMS</th>
<th>MARINE POLLUTANT</th>
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<tr>
<td>3</td>
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<td>II</td>
<td>-</td>
<td>F-E, S-D</td>
<td>-</td>
</tr>
</tbody>
</table>

14.6 ICAO (air transport)

<table>
<thead>
<tr>
<th>CLASS</th>
<th>SUB RISKS</th>
<th>PACKING</th>
<th>PACKING INSTRUCTIONS PASSENGER AIRCRAFT</th>
<th>PACKING INSTRUCTIONS CARGO AIRCRAFT</th>
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<tr>
<td>3</td>
<td>-</td>
<td>II</td>
<td>305/Y305</td>
<td>307</td>
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</tbody>
</table>

14.7 Special precautions in connection with transport

: none

14.8 Limited quantities (LQ)

When substances and their packaging meet the conditions established by ADR/RID/ADNR in chapter 3.4, only the following prescriptions shall be complied with:

- each package shall display a diamond-shaped figure with the following inscription:
  - ‘UN 1133’
- or, in the case of different goods with different identification numbers within a single package:
  - the letters ‘LQ’
15. Regulatory information

Classification according to directives 67/548/EEC and 1999/45/EC

Contains: toluene; n-hexane

R11 : Highly flammable
R38 : Irritating to skin
R48/20 : Harmful: danger of serious damage to health by prolonged exposure through inhalation
R51/53 : Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R62 : Possible risk of impaired fertility
R63 : Possible risk of harm to the unborn child
R67 : Vapours may cause drowsiness and dizziness

S07/09 : Keep container tightly closed in a well-ventilated place
S16 : Keep away from sources of ignition - No smoking
S33 : Take precautionary measures against static discharges
S36/37 : Wear suitable protective clothing and gloves
S61 : Avoid release to the environment. Refer to special instructions/safety data sheets.

15.2 National provisions:

Germany:
WGK : 2 Classification based on the components in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 17 May 1999)
EPDM BONDING ADHESIVE BA-2004(T)

16. Other information

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

N.A. = NOT APPLICABLE
N.D. = NOT DETERMINED
(*) = INTERNAL CLASSIFICATION (NFPA)

Exposure limits:
TLV : Threshold Limit Value - ACGIH USA
WEL : Workplace Exposure Limits - United Kingdom
MAK : Maximale Arbeitsplatzkonzentrationen - Germany
TRGS900: Technische Regeln für Gefahrstoffe-Arbeitsplatzgrenzwerte - Germany
MAC : Maximale aanvaarde concentratie - The Netherlands
VME : Valeurs limites de Moyenne d’Exposition - France
VLE : Valeurs limites d’Exposition à court terme - France
GWBB : Grenswaarde beroepsmatige blootstelling - Belgium
GWK : Grenswaarde kortstondige blootstelling - Belgium
EC : Indicative occupational exposure limit values - directive 2000/39/EC

I : Inhalable fraction = T: Total dust = E: Alveolengängiger Aerosolanteil
R : Respirable fraction = A: Alveolengängiger Aerosolanteil/Alveolar dust
C : Ceiling limit

a: aerosol r: rook/Rauch (fume)
d: damp (vapour) st: stof/Staub (dust)
du: dust ve: vezel (fibre)
f: fibre va: vapour
fa : Faser (fibre) ve: vezel
fi : fibre om: olie mist
fu: fume on: olienevel/Ölnebel (oil mist)
poussière (dust) part: particles

Chronic toxicity:
K : List of the carcinogenic substances and processes - The Netherlands

Full text of any R-phrases referred to under heading 2:
R11 : Highly flammable
R38 : Irritating to skin
R48/20 : Harmful: danger of serious damage to health by prolonged exposure through inhalation
R51/53 : Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R62 : Possible risk of impaired fertility
R63 : Possible risk of harm to the unborn child
R65 : Harmful: may cause lung damage if swallowed
R67 : Vapours may cause drowsiness and dizziness