

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

#### 1.1 Product identifiers

Product name : Maleic anhydride

Product Number : 108-31-6

Brand : BOSS

REACH No. : A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

CAS-No. : 108-31-6

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

Identified uses : Laboratory chemicals, Manufacture of substances

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

Company : Boss Chemical Industry Co.,Ltd. No.2  
Hualong Road, Licheng District, Jinan  
City, Shandong Province, China

Telephone : +86 531 68657995

Fax : +86 531 88803775

#### 1.4 Emergency telephone number

Emergency Phone # : +8613280017993

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

##### Classification according to Regulation (EC) No 1272/2008

Acute toxicity, Oral (Category 4), H302

Skin corrosion (Category 1B), H314

Respiratory sensitisation (Category 1), H334

Skin sensitisation (Category 1), H317

Specific target organ toxicity - repeated exposure, Inhalation (Category 1), Respiratory system, H372

Specific target organ toxicity - repeated exposure, Oral (Category 2), Kidney, H373

For the full text of the H-Statements mentioned in this Section, see Section 16.

#### 2.2 Label elements

##### Labelling according Regulation (EC) No 1272/2008

Pictogram



Signal word

Danger

|                                      |  |
|--------------------------------------|--|
| Hazard statement(s)                  |  |
| H302                                 | Harmful if swallowed.  |
| H314                                 | Causes severe skin burns and eye damage.   |
| H317                                 | May cause an allergic skin reaction.   |
| H334                                 | May cause allergy or asthma symptoms or breathing difficulties if inhaled.   |
| H372                                 | Causes damage to organs (Respiratory system) through prolonged or repeated exposure if inhaled.                                  |
| H373                                 | May cause damage to organs (Kidney) through prolonged or repeated exposure if swallowed.   |
| Precautionary statement(s)           |  |
| P261                                 | Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.   |
| P280                                 | Wear protective gloves/ protective clothing/ eye protection/ face protection.  |
| P284                                 | Wear respiratory protection.   |
| P303 + P361 + P353                   | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.                              |
| P304 + P340 + P310                   | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.              |
| P305 + P351 + P338                   | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P342 + P311                          | If experiencing respiratory symptoms: Call a POISON CENTER/doctor.   |
| Supplemental Hazard information (EU) |  |
| EUH071                               | Corrosive to the respiratory tract.  |

### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.  
Corrosive to the respiratory tract.  
Sternutator.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

|                  |   |                                   |
|------------------|---|-----------------------------------|
| Synonyms         | : | 2,5-Furandione                    |
| Formula          | : | C<SB>4</SB>H<SB>2</SB>O<SB>3</SB> |
| Molecular weight | : | 98.06 g/mol                       |
| CAS-No.          | : | 108-31-6                          |
| EC-No.           | : | 203-571-6                         |
| Index-No.        | : | 607-096-00-9                      |

#### Hazardous ingredients according to Regulation (EC) No 1272/2008

| Component               | Classification   | Concentration |
|-------------------------|--|---------------|
| <b>Maleic anhydride</b> |  |               |
| CAS-No.                 | 108-31-6   | <= 100 %      |
| EC-No.                  | 203-571-6  |               |
| Index-No.               | 607-096-00-9   |               |
|                         | Acute Tox. 4; Skin Corr. 1B;<br>Resp. Sens. 1; Skin Sens. 1;<br>STOT RE 1; STOT RE 2;<br>H302, H314, H334, H317,<br>H372, H373 |               |

For the full text of the H-Statements mentioned in this Section, see Section 16.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

**If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

**In case of eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed**

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No data available

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**SECTION 5: Firefighting 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**

Carbon oxides

**5.3 Advice for firefighters**

Wear self-contained breathing apparatus for firefighting if necessary.

**5.4 Further information**

No data available

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**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

**6.2 Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

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

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

**6.4 Reference to other sections**

For disposal see section 13.

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**SECTION 7: Handling and storage****7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

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

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

Moisture sensitive.

Storage class (TRGS 510): Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

### 8.2 Exposure controls

#### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

#### Personal protective equipment

##### Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

##### Skin protection

Handle with gloves. Gloves must be inspected prior to use. 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.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

##### Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

##### Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industria situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

##### Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

##### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use (EN 143) respirator cartridges as a backup to engineering controls. If th full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

##### Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

a) Appearance

Form: solid

Colour: white

|   |   |
|---|---|
| b) Odour  | No data available   |
| c) Odour Threshold                              | No data available   |
| d) pH   | No data available   |
| e) Melting point/freezing point                 | Melting point/range: 52 - 54 °C<br>Melting point/range: 51 - 56 °C - lit. |
| f) Initial boiling point and boiling range      | 200 °C - lit.   |
| g) Flash point                                  | No data available   |
| h) Evaporation rate                             | No data available   |
| i) Flammability (solid, gas)                    | No data available   |
| j) Upper/lower flammability or explosive limits | No data available   |
| k) Vapour pressure                              | 15.1 Pa at 22 °C - OECD Test Guideline 104                                |
| l) Vapour density                               | No data available   |
| m) Relative density                             | 1.48 g/cm <sup>3</sup> at 20 °C -   |
| n) Water solubility                             | No data available   |
| o) Partition coefficient: n-octanol/water       | log Pow: -2.609 at 20 °C - OECD Test Guideline 107                        |
| p) Auto-ignition temperature                    | No data available   |
| q) Decomposition temperature                    | No data available   |
| r) Viscosity                                    | No data available   |
| s) Explosive properties                         | No data available   |
| t) Oxidizing properties                         | No data available   |

## 9.2 Other safety information

No data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

No data available

### 10.5 Incompatible materials

Strong oxidizing agents, Strong acids, Strong bases, Strong reducing agents, Alkali metals, Amines

### 10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Other decomposition products - No data available

In the event of fire: see section 5

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - male and female - 1,090 mg/kg(Maleic anhydride)  
(OECD Test Guideline 401)

LC50 Inhalation - Rat - 1 h - > 4.35 mg/l(Maleic anhydride)

LD50 Dermal - Rabbit - female - 2,620 mg/kg(Maleic anhydride)

#### Skin corrosion/irritation

Skin - Rabbit(Maleic anhydride)

Result: Causes burns. - 4 h

#### Serious eye damage/eye irritation

Eyes - Rabbit(Maleic anhydride)

Result: Corrosive

#### Respiratory or skin sensitisation

- Rat(Maleic anhydride)

Result: May cause sensitisation by inhalation.

Buehler Test - Guinea pig(Maleic anhydride)

Result: May cause sensitisation by skin contact.

(OECD Test Guideline 406)

#### Germ cell mutagenicity

Ames test(Maleic anhydride)

Salmonella typhimurium

Result: negative

OECD Test Guideline 475(Maleic anhydride)

Rat - male and female

Result: negative

#### Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

#### Reproductive toxicity

##### Specific target organ toxicity - single exposure

No data available(Maleic anhydride)

##### Specific target organ toxicity - repeated exposure

Inhalation - Causes damage to organs through prolonged or repeated exposure. - Respiratory system

Oral - May cause damage to organs through prolonged or repeated exposure. - Kidney

#### Aspiration hazard

No data available(Maleic anhydride)

#### Additional Information

Repeated dose toxicity - Rat - male - Lowest observed adverse effect level - 250 mg/kg(Maleic anhydride)

RTECS: ON3675000

Cough, Shortness of breath, Headache, Nausea, Vomiting(Maleic anhydride)

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

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## SECTION 12: Ecological information

### 12.1 Toxicity

Toxicity to fish static test LC50 - Oncorhynchus mykiss (rainbow trout) - 75 mg/l - 96 h(Maleic



## 15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out

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### SECTION 16: Other information

#### Full text of H-Statements referred to under sections 2 and 3.

|        |   |
|--------|---|
| EUH071 | Corrosive to the respiratory tract.   |
| H302   | Harmful if swallowed.   |
| H314   | Causes severe skin burns and eye damage.  |
| H317   | May cause an allergic skin reaction.  |
| H334   | May cause allergy or asthma symptoms or breathing difficulties if inhaled.      |
| H372   | Causes damage to organs through prolonged or repeated exposure if inhaled.      |
| H373   | May cause damage to organs through prolonged or repeated exposure if swallowed. |

#### Further information

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.