

Issuing Date 29-Dec-2022

Revision date 19-Dec-2022

Revision Number 1

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

### 1.1. Product identifier

**Product Code(s)** A188N  
**Product Name** A188N  
**Pure substance/mixture** Mixture

Contains Methyl ethyl ketone

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

**Recommended use** Additive  
**Uses advised against** No information available

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

#### Company

Markem-Imaje Industries  
9, rue Gaspard Monge  
26500 Bourg-lès-Valence  
France  
<http://www.markem-imaje.com>  
E-mail: [sds@markem-imaje.com](mailto:sds@markem-imaje.com)

CONTRASTE KFT  
Budaorsi Koz 3  
2092 Budakeszi  
(36) 23 535 800

### 1.4. Emergency telephone number

Emergency Telephone Chemtrec: 1-800-424-9300 / +44-2038073798

National Emergency Service /  
Poison Control Center UK: NHS Direct: 111  
ICELAND: Poison Control Center 543 2222 or 112

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

|   |                     |
|---|---------------------|
| <b>Serious eye damage/eye irritation</b>                | Category 2 - (H319) |
| <b>Specific target organ toxicity — single exposure</b> | Category 3 - (H336) |
| Category 3 Narcotic effects                             |                     |
| <b>Flammable liquids</b>                                | Category 2 - (H225) |

### 2.2. Label elements

Contains Methyl ethyl ketone

**Signal word**

Danger

**Hazard statements**

H319 - Causes serious eye irritation

H336 - May cause drowsiness or dizziness

H225 - Highly flammable liquid and vapour

EUH066 - Repeated exposure may cause skin dryness or cracking

**Precautionary statements**

P501 - Dispose of contents and container to an approved waste disposal plant

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

P312 - Call a POISON CENTER or doctor if you feel unwell

P370 + P378 - In case of fire: Use dry chemical, CO<sub>2</sub>, water spray or alcohol-resistant foam to extinguish

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

P261 - Avoid breathing vapours

**Additional information**

This product requires tactile warnings if supplied to the general public.

**2.3. Other hazards**

No information available.

**SECTION 3: Composition/information on ingredients****3.1 Substances**

Not applicable

**3.2 Mixtures****Chemical nature**

Preparation.

| Chemical name       | EC No (EU Index No) | CAS No  | Weight-% | Classification according to Regulation (EC) No. 1272/2008 [CLP]            | REACH registration number | Specific concentration limit (SCL) | M-Factor | M-Factor (long-term) |
|---------------------|---------------------|---------|----------|--|---------------------------|------------------------------------|----------|----------------------|
| Methyl ethyl ketone | 201-159-0           | 78-93-3 | 90 - 100 | Flam. Liq. 2 (H225)<br>Eye Irrit. 2 (H319)<br>STOT SE 3 (H336)<br>(EUH066) | 01-21194572<br>90-43      | -                                  | -        | -                    |

**Full text of H- and EUH-phrases: see section 16**

Acute Toxicity Estimate

If LD50/LC50 data is not available or does not correspond to the classification category, then the appropriate conversion value from CLP Annex I, Table 3.1.2, is used to calculate the acute toxicity estimate (ATEmix) for classifying a mixture based on its components

| Chemical name                  | Oral LD50 mg/kg | Dermal LD50 mg/kg | Inhalation LC50 - 4 hour - dust/mist - mg/L                    | Inhalation LC50 - 4 hour - vapour - mg/L | Inhalation LC50 - 4 hour - gas - ppm                           |
|--------------------------------|-----------------|-------------------|--|--|--|
| Methyl ethyl ketone<br>78-93-3 | 2483            | 5000              | Inhalation LC50 Rat<br>11700 ppm 4 h<br>(Source:<br>JAPAN_GHS) | 11700                                    | Inhalation LC50 Rat<br>11700 ppm 4 h<br>(Source:<br>JAPAN_GHS) |

This product does not contain candidate substances of very high concern at a concentration  $\geq 0.1\%$  (Regulation (EC) No. 1907/2006 (REACH), Article 59)

**SECTION 4: First aid measures****4.1. Description of first aid measures**

|   |  |
|---|--|
| <b>General advice</b>                     | Show this safety data sheet to the doctor in attendance.   |
| <b>Inhalation</b>                         | Remove to fresh air. IF exposed or concerned: Get medical advice/attention.  |
| <b>Eye contact</b>                        | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.                            |
| <b>Skin contact</b>                       | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.  |
| <b>Ingestion</b>                          | Clean mouth with water and afterwards drink plenty of water. Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Call a doctor.  |
| <b>Self-protection of the first aider</b> | Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. |

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

|                 |   |
|-----------------|---|
| <b>Symptoms</b> | May cause redness and tearing of the eyes. Burning sensation. Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. |
|-----------------|---|

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

|                        |                        |
|------------------------|------------------------|
| <b>Note to doctors</b> | Treat symptomatically. |
|------------------------|------------------------|

**SECTION 5: Firefighting measures****5.1. Extinguishing media**

|                                     |   |
|-------------------------------------|---|
| <b>Suitable Extinguishing Media</b> | Dry chemical. Carbon dioxide (CO <sub>2</sub> ). Water spray. Alcohol resistant foam. |
|-------------------------------------|---|

**Large Fire**

CAUTION: Use of water spray when fighting fire may be inefficient.

**Unsuitable extinguishing media**

Do not scatter spilled material with high pressure water streams.

**5.2. Special hazards arising from the substance or mixture****Specific hazards arising from the chemical**

Risk of ignition. Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

**5.3. Advice for firefighters****Special protective equipment and precautions for fire-fighters**

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

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

Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material.

**Other information**

Ventilate the area. Refer to protective measures listed in Sections 7 and 8.

**For emergency responders**

Use personal protection recommended in Section 8.

**6.2. Environmental precautions****Environmental precautions**

Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

**6.3. Methods and material for containment and cleaning up****Methods for containment**

Stop leak if you can do it without risk. Do not touch or walk through spilled material. A vapour suppressing foam may be used to reduce vapours. Dyke far ahead of spill to collect run-off water. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

**Methods for cleaning up**

Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers.

**Prevention of secondary hazards**

Clean contaminated objects and areas thoroughly observing environmental regulations.

**6.4. Reference to other sections****Reference to other sections**

See section 8 for more information. See section 13 for more information.

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

Use personal protection equipment. Avoid breathing vapours or mists. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use

grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use with local exhaust ventilation. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Use according to package label instructions. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. In case of insufficient ventilation, wear suitable respiratory equipment.

**General hygiene considerations**

Do not eat, drink or smoke when using this product. Contaminated work clothing must not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection.

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

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labelled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store in accordance with the particular national regulations. Store in accordance with local regulations.

**7.3. Specific end use(s)**

**Risk Management Methods (RMM)** The information required is contained in this Safety Data Sheet.

**SECTION 8: Exposure controls/personal protection****8.1. Control parameters****Exposure Limits**

| Chemical name                  | European Union  | Austria  | Belgium   | Bulgaria   | Croatia  |
|--------------------------------|---|--|---|--|--|
| Methyl ethyl ketone<br>78-93-3 | TWA: 200 ppm<br>TWA: 600 mg/m <sup>3</sup><br>STEL: 300 ppm<br>STEL: 900 mg/m <sup>3</sup>        | TWA: 100 ppm<br>TWA: 295 mg/m <sup>3</sup><br>STEL: 200 ppm<br>STEL: 590 mg/m <sup>3</sup><br>H* | TWA: 200 ppm<br>TWA: 600 mg/m <sup>3</sup><br>STEL: 300 ppm<br>STEL: 900 mg/m <sup>3</sup>      | STEL: 885 mg/m <sup>3</sup><br>TWA: 590 mg/m <sup>3</sup>                                  | TWA: 200 ppm<br>TWA: 600 mg/m <sup>3</sup><br>STEL: 300 ppm<br>STEL: 900 mg/m <sup>3</sup>       |
| Chemical name                  | Cyprus  | Czech Republic   | Denmark   | Estonia  | Finland  |
| Methyl ethyl ketone<br>78-93-3 | STEL: 300 ppm<br>STEL: 900 mg/m <sup>3</sup><br>TWA: 200 ppm<br>TWA: 600 mg/m <sup>3</sup>        | TWA: 600 mg/m <sup>3</sup><br>Ceiling: 900 mg/m <sup>3</sup>                                     | TWA: 50 ppm<br>TWA: 145 mg/m <sup>3</sup><br>H*   | TWA: 200 ppm<br>TWA: 600 mg/m <sup>3</sup><br>STEL: 300 ppm<br>STEL: 900 mg/m <sup>3</sup> | TWA: 20 ppm<br>TWA: 60 mg/m <sup>3</sup><br>STEL: 100 ppm<br>STEL: 300 mg/m <sup>3</sup><br>iho* |
| Chemical name                  | France  | Germany TRGS   | Germany DFG   | Greece   | Hungary  |
| Methyl ethyl ketone<br>78-93-3 | TWA: 200 ppm<br>TWA: 600 mg/m <sup>3</sup><br>STEL: 300 ppm<br>STEL: 900 mg/m <sup>3</sup><br>*   | TWA: 200 ppm<br>TWA: 600 mg/m <sup>3</sup><br>H*   | TWA: 200 ppm<br>TWA: 600 mg/m <sup>3</sup><br>Peak: 200 ppm<br>Peak: 600 mg/m <sup>3</sup><br>* | TWA: 200 ppm<br>TWA: 600 mg/m <sup>3</sup><br>STEL: 300 ppm<br>STEL: 900 mg/m <sup>3</sup> | TWA: 600 mg/m <sup>3</sup><br>STEL: 900 mg/m <sup>3</sup><br>b*                                  |
| Chemical name                  | Ireland   | Italy MDLPS  | Italy AIDII   | Latvia   | Lithuania  |
| Methyl ethyl ketone<br>78-93-3 | TWA: 200 ppm<br>TWA: 600 mg/m <sup>3</sup><br>STEL: 300 ppm<br>STEL: 900 mg/m <sup>3</sup><br>Sk* | TWA: 200 ppm<br>TWA: 600 mg/m <sup>3</sup><br>STEL: 300 ppm<br>STEL: 900 mg/m <sup>3</sup>       | TWA: 200 ppm<br>TWA: 590 mg/m <sup>3</sup><br>STEL: 300 ppm<br>STEL: 885 mg/m <sup>3</sup>      | TWA: 67 ppm<br>TWA: 200 mg/m <sup>3</sup><br>STEL: 300 ppm<br>STEL: 900 mg/m <sup>3</sup>  | -  |
| Chemical name                  | Luxembourg  | Malta  | Netherlands   | Norway   | Poland   |
| Methyl ethyl ketone            | STEL: 300 ppm   | STEL: 300 ppm  | TWA: 590 mg/m <sup>3</sup>  | TWA: 75 ppm  | STEL: 900 mg/m <sup>3</sup>  |

|                                |   |  |  |  |   |
|--------------------------------|---|--|--|--|---|
| 78-93-3                        | STEL: 900 mg/m <sup>3</sup><br>TWA: 200 ppm<br>TWA: 600 mg/m <sup>3</sup>                                 | STEL: 900 mg/m <sup>3</sup><br>TWA: 200 ppm<br>TWA: 600 mg/m <sup>3</sup>                  | STEL: 900 mg/m <sup>3</sup><br>H*  | TWA: 220 mg/m <sup>3</sup><br>STEL: 112.5 ppm<br>STEL: 275 mg/m <sup>3</sup>                     | TWA: 450 mg/m <sup>3</sup><br>skóra*  |
| Chemical name                  | Portugal  | Romania  | Slovakia   | Slovenia   | Spain   |
| Methyl ethyl ketone<br>78-93-3 | TWA: 200 ppm<br>TWA: 600 mg/m <sup>3</sup><br>STEL: 300 ppm<br>STEL: 900 mg/m <sup>3</sup>                | TWA: 200 ppm<br>TWA: 600 mg/m <sup>3</sup><br>STEL: 300 ppm<br>STEL: 900 mg/m <sup>3</sup> | TWA: 200 ppm<br>TWA: 600 mg/m <sup>3</sup><br>Ceiling: 900 mg/m <sup>3</sup>                     | TWA: 200 ppm<br>TWA: 600 mg/m <sup>3</sup><br>STEL: 300 ppm<br>STEL: 900 mg/m <sup>3</sup><br>K* | TWA: 200 ppm<br>TWA: 600 mg/m <sup>3</sup><br>STEL: 300 ppm<br>STEL: 900 mg/m <sup>3</sup>        |
| Chemical name                  | Sweden  |  | Switzerland  |  | United Kingdom  |
| Methyl ethyl ketone<br>78-93-3 | NGV: 50 ppm<br>NGV: 150 mg/m <sup>3</sup><br>Bindande KGV: 300 ppm<br>Bindande KGV: 900 mg/m <sup>3</sup> |  | TWA: 200 ppm<br>TWA: 590 mg/m <sup>3</sup><br>STEL: 200 ppm<br>STEL: 590 mg/m <sup>3</sup><br>H* |  | TWA: 200 ppm<br>TWA: 600 mg/m <sup>3</sup><br>STEL: 300 ppm<br>STEL: 899 mg/m <sup>3</sup><br>Sk* |

### Biological occupational exposure limits

|                                |  |  |   |  |  |
|--------------------------------|--|--|---|--|--|
| Chemical name                  | European Union   | Austria  | Bulgaria  | Croatia  | Czech Republic                                 |
| Methyl ethyl ketone<br>78-93-3 | -  | -  | -   | 2.6 mg/g Creatinine -<br>urine (Ethyl methyl<br>ketone) - at the end<br>of the work shift                    | -  |
| Chemical name                  | Denmark  | Finland  | France  | Germany DFG  | Germany TRGS                                   |
| Methyl ethyl ketone<br>78-93-3 | -  | -  | 2 mg/L - urine<br>(Methylethylketone) -<br>end of shift   | 2 mg/L (urine -<br>2-Butanone end of<br>shift)<br>2 mg/L - BAT (end of<br>exposure or end of<br>shift) urine | 2 mg/L (urine -<br>2-Butanone end of<br>shift) |
| Chemical name                  | Hungary  | Ireland  | Italy MDLPS   | Italy AIDII  |  |
| Methyl ethyl ketone<br>78-93-3 | -  | 70 µmol/L (urine -<br>Butan-2-one post shift)        | -   | 2 mg/L - urine (MEK) -<br>end of shift   |  |
| Chemical name                  | Latvia   | Luxembourg   | Romania   | Slovakia   |  |
| Methyl ethyl ketone<br>78-93-3 | -  | -  | 2 mg/L - urine<br>(Methylethylketone) - end<br>of shift   | -  |  |
| Chemical name                  | Slovenia   | Spain  | Switzerland   | United Kingdom   |  |
| Methyl ethyl ketone<br>78-93-3 | 2 mg/L - urine<br>(2-Butanone) - at the end<br>of the work shift | 2 mg/L (urine - Methyl<br>ethyl ketone end of shift) | 2 mg/L (urine -<br>2-Butanone end of shift,<br>before subsequent shift or<br>16 hour)<br>27.7 µmol/L (urine -<br>2-Butanone end of shift,<br>before subsequent shift or<br>16 hour) | 70 µmol/L - urine<br>(Butan-2-one) - post shift  |  |

**Derived No Effect Level (DNEL)** No information available.

**Predicted No Effect Concentration (PNEC)**

### Derived No Effect Level (DNEL) - Workers

|                                |      |                           |                               |
|--------------------------------|------|---------------------------|-------------------------------|
| Chemical name                  | Oral | Dermal                    | Inhalation                    |
| Methyl ethyl ketone<br>78-93-3 | -    | 1161 mg/kg bw/day [4] [6] | 600 mg/m <sup>3</sup> [4] [6] |

[4] Systemic health effects.  
[6] Long term.

#### Derived No Effect Level (DNEL) - General Public

| Chemical name                  | Oral                    | Dermal | Inhalation                    |
|--------------------------------|-------------------------|--------|-------------------------------|
| Methyl ethyl ketone<br>78-93-3 | 31 mg/kg bw/day [4] [6] | -      | 106 mg/m <sup>3</sup> [4] [6] |

[4] Systemic health effects.  
[6] Long term.

#### Predicted No Effect Concentration (PNEC)

| Chemical name                  | Freshwater | Freshwater<br>(intermittent release) | Marine water | Marine water<br>(intermittent release) | Air |
|--------------------------------|------------|--------------------------------------|--------------|--|-----|
| Methyl ethyl ketone<br>78-93-3 | 55.8 mg/L  | 55.8 mg/L                            | 55.8 mg/L    | -                                      | -   |

| Chemical name                  | Freshwater<br>sediment      | Marine sediment            | Sewage treatment | Soil               | Food chain      |
|--------------------------------|-----------------------------|----------------------------|------------------|--------------------|-----------------|
| Methyl ethyl ketone<br>78-93-3 | 284.74 mg/kg<br>sediment dw | 284.7 mg/kg<br>sediment dw | 709 mg/L         | 22.5 mg/kg soil dw | 1000 mg/kg food |

## 8.2. Exposure controls

**Engineering controls** No information available.

### Personal protective equipment

**Eye/face protection** Tight sealing safety goggles.

**Hand protection** Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. Wear suitable gloves. Impervious gloves.

**Skin and body protection** Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron. Antistatic boots.

**Respiratory protection** No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

**General hygiene considerations** Do not eat, drink or smoke when using this product. Contaminated work clothing must not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection.

**Environmental exposure controls** No information available.

## SECTION 9: Physical and chemical properties

**9.1. Information on basic physical and chemical properties**

|                 |                          |
|-----------------|--------------------------|
| Physical state  | Liquid                   |
| Colour          | violet                   |
| Odour           | Solvent.                 |
| Odour threshold | No information available |

| <u>Property</u>                         | <u>Values</u>                    | <u>Remarks • Method</u> |
|---|----------------------------------|-------------------------|
| Melting point / freezing point          | -85 °C                           |                         |
| Initial boiling point and boiling range | 75 °C                            |                         |
| Flammability                            | No data available                | None known              |
| Flammability Limit in Air               |                                  | None known              |
| Upper flammability or explosive limits  | 11.5                             |                         |
| Lower flammability or explosive limits  | 1.8                              |                         |
| Flash point                             | -9 °C                            |                         |
| Autoignition temperature                | 500 °C                           |                         |
| Decomposition temperature               | - °C                             | None known              |
| pH                                      | No data available                |                         |
| pH (as aqueous solution)                | No data available                | None known              |
| Kinematic viscosity                     | No data available                | None known              |
| Dynamic viscosity                       | No data available                | None known              |
| Water solubility                        | No data available partly soluble |                         |
| Solubility(ies)                         | No data available                | None known              |
| Partition coefficient                   | log P(o/w) = 0.26                |                         |
| Vapour pressure                         | No data available                | None known              |
| Relative density                        | 0.81                             |                         |
| Bulk density                            | No data available                |                         |
| Liquid Density                          | No data available                |                         |
| Relative vapour density                 | No data available                | None known              |
| Particle characteristics                |                                  |                         |
| Particle Size                           | No information available         |                         |
| Particle Size Distribution              | No information available         |                         |

**9.2. Other information**

VOC content 100

9.2.1. Information with regards to physical hazard classes  
Not applicable - °C - °C

9.2.2. Other safety characteristics  
No information available

**SECTION 10: Stability and reactivity****10.1. Reactivity**

Reactivity No information available.

**10.2. Chemical stability**

Stability Stable under normal conditions.

**Explosion data**

Sensitivity to mechanical impact None.

Sensitivity to static discharge Yes.

**10.3. Possibility of hazardous reactions**

Possibility of hazardous reactions None under normal processing.



Hazardous polymerisation no.

#### 10.4. Conditions to avoid

Conditions to avoid Heat, flames and sparks.

#### 10.5. Incompatible materials

Incompatible materials None known based on information supplied.

#### 10.6. Hazardous decomposition products

Hazardous decomposition products none.

## **SECTION 11: Toxicological information**

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Information on likely routes of exposure

##### Product Information

|                     |   |
|---------------------|---|
| <b>Inhalation</b>   | Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract. May cause drowsiness or dizziness.               |
| <b>Eye contact</b>  | Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). May cause redness, itching, and pain. |
| <b>Skin contact</b> | Specific test data for the substance or mixture is not available. May cause irritation. Prolonged contact may cause redness and irritation.                   |
| <b>Ingestion</b>    | Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.            |

#### Symptoms related to the physical, chemical and toxicological characteristics

**Symptoms** May cause redness and tearing of the eyes. Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

#### Acute toxicity

##### Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document

|                        |                |
|------------------------|----------------|
| <b>ATEmix (oral)</b>   | 3,460.00 mg/kg |
| <b>ATEmix (dermal)</b> | 5,000.00 mg/kg |

- 0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.
- 0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.
- 0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas).
- 0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapour).
- 0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).

##### Component Information

| Chemical name       | Oral LD50          | Dermal LD50             | Inhalation LC50         |
|---------------------|--------------------|-------------------------|-------------------------|
| Methyl ethyl ketone | 2483 mg/kg ( Rat ) | = 5000 mg/kg ( Rabbit ) | = 11700 ppm ( Rat ) 4 h |

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

|  |  |
|--|--|
| <b>Skin corrosion/irritation</b>         | May cause skin irritation.   |
| <b>Serious eye damage/eye irritation</b> | Classification based on data available for ingredients. Causes serious eye irritation. |
| <b>Respiratory or skin sensitisation</b> | No information available.  |
| <b>Germ cell mutagenicity</b>            | No information available.  |
| <b>Carcinogenicity</b>                   | No information available.  |
| <b>Reproductive toxicity</b>             | No information available.  |
| <b>STOT - single exposure</b>            | May cause drowsiness or dizziness.   |
| <b>STOT - repeated exposure</b>          | No information available.  |
| <b>Aspiration hazard</b>                 | No information available.  |

**11.2. Information on other hazards****11.2.1. Endocrine disrupting properties**

**Endocrine disrupting properties** No information available.

**11.2.2. Other information**

**Other adverse effects** No information available.

**SECTION 12: Ecological information****12.1. Toxicity****Ecotoxicity**

**Unknown aquatic toxicity** Contains 0 % of components with unknown hazards to the aquatic environment.

| Chemical name       | Algae/aquatic plants | Fish  | Toxicity to microorganisms | Crustacea   |
|---------------------|----------------------|---|----------------------------|---|
| Methyl ethyl ketone | -                    | LC50: 3130 - 3320mg/L<br>(96h, Pimephales promelas) | -                          | EC50: >520mg/L (48h, Daphnia magna)<br>EC50: =5091mg/L (48h, Daphnia magna)<br>EC50: 4025 - 6440mg/L (48h, Daphnia magna) |

**12.2. Persistence and degradability**

**Persistence and degradability** No information available.

**12.3. Bioaccumulative potential****Bioaccumulation****Component Information**

| Chemical name       | Partition coefficient |
|---------------------|-----------------------|
| Methyl ethyl ketone | 0.3                   |

**12.4. Mobility in soil**

**Mobility in soil** No information available.

**12.5. Results of PBT and vPvB assessment**

**PBT and vPvB assessment** No information available.

| Chemical name       | PBT and vPvB assessment         |
|---------------------|---------------------------------|
| Methyl ethyl ketone | The substance is not PBT / vPvB |

**12.6. Endocrine disrupting properties**

**Endocrine disrupting properties** No information available.

**12.7. Other adverse effects**

No information available.

**SECTION 13: Disposal considerations****13.1. Waste treatment methods****Waste from residues/unused products**

Do not dispose of waste into sewer. Do not allow into any sewer on the ground, or into any body of water. Should not be released into the environment. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation. This material and its container must be disposed of as hazardous waste.

**Contaminated packaging**

Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers. Dispose of wastes in an approved waste disposal facility.

**Other information**

Waste codes should be assigned by the user based on the application for which the product was used.

**SECTION 14: Transport information****IATA**

- 14.1 UN number or ID number UN1193  
 14.2 UN proper shipping name Methyl ethyl ketone  
 14.3 Transport hazard class(es) 3  
 14.4 Packing group II  
 14.5 Environmental hazards Not applicable  
 14.6 Special precautions for user

Special Provisions None

**IMDG**

14.1 UN number or ID number UN1193  
 14.2 UN proper shipping name Methyl ethyl ketone  
 14.3 Transport hazard class(es) 3  
 14.4 Packing group II  
 14.5 Environmental hazards Not applicable  
 14.6 Special precautions for user  
     Special Provisions None  
     EmS-No F-E, S-D  
 Maritime transport in bulk according to IMO instruments No information available

**ADR**

14.1 UN number or ID number UN1193  
 14.2 UN proper shipping name Methyl ethyl ketone  
 14.3 Transport hazard class(es) 3  
 14.4 Packing group II  
 14.5 Environmental hazards Not applicable  
 14.6 Special precautions for user  
     Special Provisions None  
     Classification code F1

**SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulations****France****Occupational Illnesses (R-463-3, France)**

| Chemical name                  | French RG number |
|--------------------------------|------------------|
| Methyl ethyl ketone<br>78-93-3 | RG 84            |

**Germany**

Water hazard class (WGK) slightly hazardous to water (WGK 1)

**European Union**

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

**Authorisations and/or restrictions on use:**

This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

| Chemical name                 | Restricted substance per REACH Annex XVII | Substance subject to authorisation per REACH Annex XIV |
|-------------------------------|---|--|
| Methyl ethyl ketone - 78-93-3 | 75.                                       | -  |

**Persistent Organic Pollutants**

Not applicable

**Dangerous substance category per Seveso Directive (2012/18/EU)**

P5a - FLAMMABLE LIQUIDS

P5b - FLAMMABLE LIQUIDS

P5c - FLAMMABLE LIQUIDS

### Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable

### International Inventories

|                      |  |
|----------------------|--|
| <b>TSCA</b>          | Contact supplier for inventory compliance status |
| <b>DSL/NDSL</b>      | Contact supplier for inventory compliance status |
| <b>EINECS/ELINCS</b> | Contact supplier for inventory compliance status |
| <b>ENCS</b>          | Contact supplier for inventory compliance status |
| <b>IECSC</b>         | Contact supplier for inventory compliance status |
| <b>KECL</b>          | Contact supplier for inventory compliance status |
| <b>PICCS</b>         | Contact supplier for inventory compliance status |
| <b>AIIC</b>          | Contact supplier for inventory compliance status |
| <b>NZIoC</b>         | Contact supplier for inventory compliance status |

### Legend:

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List  
**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances  
**ENCS** - Japan Existing and New Chemical Substances  
**IECSC** - China Inventory of Existing Chemical Substances  
**KECL** - Korean Existing and Evaluated Chemical Substances  
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**AICS** - Australian Inventory of Chemical Substances  
**NZIoC** - New Zealand Inventory of Chemicals

### 15.2. Chemical safety assessment

**Chemical Safety Report** No information available

## **SECTION 16: Other information**

### Key or legend to abbreviations and acronyms used in the safety data sheet

#### **Full text of H-Statements referred to under section 3**

EUH066 - Repeated exposure may cause skin dryness or cracking  
H225 - Highly flammable liquid and vapour  
H319 - Causes serious eye irritation  
H336 - May cause drowsiness or dizziness

#### **Legend**

SVHC: Substances of Very High Concern for Authorisation:

#### **Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

|         |                             |      |                                  |
|---------|-----------------------------|------|----------------------------------|
| TWA     | TWA (time-weighted average) | STEL | STEL (Short Term Exposure Limit) |
| Ceiling | Maximum limit value         | *    | Skin designation                 |
| +       | Sensitisers                 |      |                                  |

| Classification procedure  |                    |
|---|--------------------|
| Classification according to Regulation (EC) No. 1272/2008 [CLP] | Method Used        |
| Acute oral toxicity   | Calculation method |

|                                       |                    |
|---------------------------------------|--------------------|
| Acute dermal toxicity                 | Calculation method |
| Acute inhalation toxicity - gas       | Calculation method |
| Acute inhalation toxicity - vapour    | Calculation method |
| Acute inhalation toxicity - dust/mist | Calculation method |
| Skin corrosion/irritation             | Calculation method |
| Serious eye damage/eye irritation     | Calculation method |
| Respiratory sensitisation             | Calculation method |
| Skin sensitisation                    | Calculation method |
| Mutagenicity                          | Calculation method |
| Carcinogenicity                       | Calculation method |
| Reproductive toxicity                 | Calculation method |
| STOT - single exposure                | Calculation method |
| STOT - repeated exposure              | Calculation method |
| Acute aquatic toxicity                | Calculation method |
| Chronic aquatic toxicity              | Calculation method |
| Aspiration hazard                     | Calculation method |
| Ozone                                 | Calculation method |

#### Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)  
U.S. Environmental Protection Agency ChemView Database  
European Food Safety Authority (EFSA)  
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA\_RAC)  
European Chemicals Agency (ECHA) (ECHA\_API)  
EPA (Environmental Protection Agency)  
Acute Exposure Guideline Level(s) (AEGL(s))  
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act  
U.S. Environmental Protection Agency High Production Volume Chemicals  
Food Research Journal  
Hazardous Substance Database  
International Uniform Chemical Information Database (IUCLID)  
National Institute of Technology and Evaluation (NITE)  
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)  
NIOSH (National Institute for Occupational Safety and Health)  
National Library of Medicine's ChemID Plus (NLM CIP)  
National Library of Medicine's PubMed database (NLM PUBMED)  
National Toxicology Program (NTP)  
New Zealand's Chemical Classification and Information Database (CCID)  
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications  
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme  
Organisation for Economic Co-operation and Development Screening Information Data Set  
World Health Organization

Revision date 19-Dec-2022

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

#### Disclaimer

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**End of Safety Data Sheet**