

## Safety data sheet

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

#### 1.1. Product identifier

Code: M8119  
Product name: DRAI

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

Intended use: Oleo-repellent for marble and granite. Professional use only.

Uses advised against: no one in particular

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

Name: ILPA ADESIVI SRL  
Full address: Via Ferorelli, 4  
District and Country: 70132 BARI (BARI)  
ITALIA  
Tel. + 39 0805383837  
Fax + 39 0805377807

e-mail address of the competent person responsible for the Safety Data Sheet: abborricelli@ilpa.it

#### 1.4. Emergency telephone number

For urgent inquiries refer to: + 39 3355405598 (Technical support - 8,00 - 17,00 - LUN-VEN; MON-FRI)(Italian time zone)  
Safety Executive (HSE) Chemicals Regulation Directorate 5S.1 Redgrave Court, Merton Road, Bootle, Merseyside. L20 7HS.  
Phone: +44 151 9513317

### SECTION 2. Hazards identification.

#### 2.1. Classification of the substance or mixture.

The product is classified as hazardous pursuant to the provisions set forth in EC Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of EC Regulation 1907/2006 and subsequent amendments. Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

#### Hazard classification and indication:

|  |      |  |
|--|------|--|
| Flammable liquid, category 2                                       | H225 | Highly flammable liquid and vapour.                |
| Aspiration hazard, category 1                                      | H304 | May be fatal if swallowed and enters airways.      |
| Eye irritation, category 2   | H319 | Causes serious eye irritation.                     |
| Specific target organ toxicity - single exposure, category 3       | H336 | May cause drowsiness or dizziness.                 |
| Hazardous to the aquatic environment, chronic toxicity, category 3 | H412 | Harmful to aquatic life with long lasting effects. |

#### 2.2. Label elements.

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.



Signal words:                      Danger

Hazard statements:

**H225**                      Highly flammable liquid and vapour.  
**H304**                      May be fatal if swallowed and enters airways.  
**H319**                      Causes serious eye irritation.  
**H336**                      May cause drowsiness or dizziness.  
**H412**                      Harmful to aquatic life with long lasting effects.  
**EUH066**                      Repeated exposure may cause skin dryness or cracking.

Precautionary statements:

**P210**                      Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
**P233**                      Keep container tightly closed.  
**P264**                      Wash hands thoroughly after handling.  
**P280**                      Wear protective gloves / eye protection / face protection.  
**P301+P310**                      IF SWALLOWED: Immediately call a POISON CENTER / doctor.  
**P304+P340**                      IF INHALED: Remove person to fresh air and keep comfortable for breathing.

**Contains:**                      METHYL ETHYL KETONE  
    HYDROCARBONS, C9, AROMATICS  
    ETHYL ACETATE  
    XYLENE (MIXTURE OF ISOMERS)

**2.3. Other hazards.**

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

**SECTION 3. Composition/information on ingredients.**

**3.1. Substances.**

Information not relevant.

**3.2. Mixtures.**

Contains:

| Identification.            | Conc. %. | Classification 1272/2008 (CLP).                              |
|----------------------------|----------|--|
| <b>METHYL ETHYL KETONE</b> |          |  |
| CAS. 78-93-3               | 82 - 86  | Flam. Liq. 2 H225, Eye Irrit. 2 H319, STOT SE 3 H336, EUH066 |
| EC. 201-159-0              |          |  |
| INDEX. 606-002-00-3        |          |  |

Reg. no. 01-2119457290-43

**HYDROCARBONS, C9, AROMATICS**

CAS. - 8 - 9 Flam. Liq. 3 H226, Asp. Tox. 1 H304, STOT SE 3 H335, STOT SE 3 H336, Aquatic Chronic 2 H411, EUH066

EC. 918-668-5

INDEX. -

Reg. no. 01-2119455851-35

**ETHYL ACETATE**

CAS. 141-78-6 3 - 3,5 Flam. Liq. 2 H225, Eye Irrit. 2 H319, STOT SE 3 H336, EUH066

EC. 205-500-4

INDEX. 607-022-00-5

Reg. no. 01-2119475103-46

**XYLENE (MIXTURE OF ISOMERS)**

CAS. 1330-20-7 1,5 - 2 Flam. Liq. 3 H226, Acute Tox. 4 H312, Acute Tox. 4 H332, Asp. Tox. 1 H304, STOT RE 2 H373, Eye Irrit. 2 H319, Skin Irrit. 2 H315, STOT SE 3 H335, Note C

EC. 215-535-7

INDEX. 601-022-00-9

Reg. no. 01-2119488216-32

Note: Upper limit is not included into the range.

The full wording of hazard (H) phrases is given in section 16 of the sheet.

## SECTION 4. First aid measures.

### 4.1. Description of first aid measures.

EYES: Remove contact lenses, if present. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. If problem persists, seek medical advice.

SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention immediately. Wash contaminated clothing before using it again.

INHALATION: Remove to open air. If the subject stops breathing, administer artificial respiration. Get medical advice/attention immediately.

INGESTION: Get medical advice/attention immediately. Do not induce vomiting. Do not administer anything not explicitly authorised by a doctor.

PROTECTIVE MEASURES FOR THE FIRST RESCUE WORKERS: for PPE (personal protection equipment) required for first aid refer to section 8.2 of this safety data sheet.

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

For symptoms and effects caused by the contained substances, see chap. 11.

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

Information not available.

## SECTION 5. Firefighting measures.

### 5.1. Extinguishing media.

#### SUITABLE EXTINGUISHING EQUIPMENT

Extinguishing substances are: carbon dioxide, foam, chemical powder. For product loss or leakage that has not caught fire, water spray can be used to disperse flammable vapours and protect those trying to stem the leak.

#### UNSUITABLE EXTINGUISHING EQUIPMENT

Do not use jets of water. Water is not effective for putting out fires but can be used to cool containers exposed to flames to prevent explosions.

### 5.2. Special hazards arising from the substance or mixture.

#### HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

Excess pressure may form in containers exposed to fire at a risk of explosion. Do not breathe combustion products.

### 5.3. Advice for firefighters.

#### GENERAL INFORMATION

Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

#### SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

## SECTION 6. Accidental release measures.

### 6.1. Personal precautions, protective equipment and emergency procedures.

Block the leakage if there is no hazard.

Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

### 6.2. Environmental precautions.

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

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

Collect the leaked product into a suitable container. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material.

Make sure the leakage site is well aired. Check incompatibility for container material in section 7. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

### 6.4. Reference to other sections.

Any information on personal protection and disposal is given in sections 8 and 13.

## SECTION 7. Handling and storage.

### 7.1. Precautions for safe handling.

Keep away from heat, sparks and naked flames; do not smoke or use matches or lighters. Vapours may catch fire and an explosion may occur; vapour accumulation is therefore to be avoided by leaving windows and doors open and ensuring good cross ventilation. Without adequate ventilation, vapours may accumulate at ground level and, if ignited, catch fire even at a distance, with the danger of backfire. Avoid bunching of electrostatic charges. When performing transfer operations involving large containers, connect to an earthing system and wear antistatic footwear. Vigorous stirring and flow through the tubes and equipment may cause the formation and accumulation of electrostatic charges. In order to avoid the risk of fires and explosions, never use compressed air when handling. Open containers with caution as they may be pressurised. Do not eat, drink or smoke during use. Avoid leakage of the product into the environment.

### 7.2. Conditions for safe storage, including any incompatibilities.

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Store in a well ventilated place, keep far away from sources of heat, naked flames and sparks and other sources of ignition. Keep containers away from any incompatible materials, see section 10 for details.

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

No use other than specified in Section 1.2 of this safety data sheet.

## SECTION 8. Exposure controls/personal protection.

### 8.1. Control parameters.

Regulatory References:

|     |                  |   |
|-----|------------------|---|
| AUS | Österreich       | Grenzwerteverordnung 2011 - GKV 2011  |
| BEL | Belgique         | AR du 11/3/2002. La liste est mise à jour pour 2010   |
| BGR | България         | МИНИСТЕРСТВО НА ТРУДА И СОЦИАЛНАТА ПОЛИТИКА<br>МИНИСТЕРСТВО НА ЗДРАВЕОПАЗВАНЕТО НАРЕДБА No 13 от 30<br>декември 2003 г                            |
| CHE | Suisse / Schweiz | Valeurs limites d'exposition aux postes de travail 2012. / Grenzwerte am<br>Arbeitsplatz  |
| CYP | Κύπρος           | Κ.Δ.Π. 268/2001; Κ.Δ.Π. 55/2004; Κ.Δ.Π. 295/2007; Κ.Δ.Π. 70/2012  |
| CZE | Česká Republika  | Nařízení vlády č. 361/2007 Sb. kterým se stanoví podmínky ochrany<br>zdraví při práci   |
| DEU | Deutschland      | MAK-und BAT-Werte-Liste 2012  |
| DNK | Danmark          | Graensevaerdier per stoffer og materialer   |
| ESP | España           | INSHT - Límites de exposición profesional para agentes químicos en<br>España 2015   |
| EST | Eesti            | Töökeskkonna keemiliste ohutegurite piinormid 1. Vastu võetud<br>18.09.2001 nr 293 RT I 2001, 77, 460 - Redaktsiooni jõustumise kp:<br>01.01.2008 |
| FIN | Suomi            | HTP-arvot 2012. Haitallisiksi tunnetut pitoisuudet - Sosiaali- ja<br>terveysministeriön julkaisuja 2012:5   |
| FRA | France           | JORF n°0109 du 10 mai 2012 page 8773 texte n° 102   |

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|     |                |  |
|-----|----------------|--|
| GRB | United Kingdom | EH40/2005 Workplace exposure limits  |
| GRC | Ελλάδα         | ΕΦΗΜΕΡΙΣ ΤΗΣ ΚΥΒΕΡΝΗΣΕΩΣ -ΤΕΥΧΟΣ ΠΡΩΤΟ Αρ. Φύλλου 19 - 9<br>Φεβρουαρίου 2012                       |
| HRV | Hrvatska       | NN13/09 - Ministarstvo gospodarstva, rada i poduzetništva  |
| HUN | Magyarország   | 50/2011. (XII. 22.) NGM rendelet a munkahelyek kémiai biztonságáról                                |
| IRL | Éire           | Code of Practice Chemical Agent Regulations 2011   |
| ITA | Italia         | Decreto Legislativo 9 Aprile 2008, n.81  |
| LTU | Lietuva        | DĖL LIETUVOS HIGIENOS NORMOS HN 23:2007 CHEMINIŲ<br>MEDŽIAGŲ 2007 m. spalio 15 d. Nr. V-827/A1-287 |
| LVA | Latvija        | Ķīmisko vielu aroda ekspozīcijas robežvērtības (AER) darba vides gaisā<br>2012                     |
| NLD | Nederland      | Databank of the social and Economic Council of Netherlands (SER) Values,<br>AF 2011:18             |
| NOR | Norge          | Veiledning om Administrative normer for forurensning i arbeidsatmosfære                            |
| POL | Polska         | ROZPORZĄDZENIE MINISTRA PRACY I POLITYKI SPOŁECZNEJ z dnia<br>16 grudnia 2011r                     |
| SVK | Slovensko      | NARIADENIE VLÁDY Slovenskej republiky z 20. júna 2007  |
| SVN | Slovenija      | Uradni list Republike Slovenije 15. 6. 2007  |
| SWE | Sverige        | Occupational Exposure Limit Values, AF 2011:18   |
| TUR | Türkiye        | 2000/39/EC sayılı Direktifin ekidir  |
| EU  | OEL EU         | Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC;<br>Directive 2000/39/EC.        |
|     | TLV-ACGIH      | ACGIH 2014   |

### METHYL ETHYL KETONE

#### Threshold Limit Value.

| Type | Country | TWA/8h |     | STEL/15min |     |       |
|------|---------|--------|-----|------------|-----|-------|
|      |         | mg/m3  | ppm | mg/m3      | ppm |       |
| MAK  | AUS     | 295    | 100 | 590        | 200 | SKIN. |
| VLEP | BEL     | 600    | 200 | 900        | 300 |       |
| TLV  | BGR     | 590    |     | 885        |     |       |
| VEL  | CHE     | 590    | 200 | 590        | 200 | SKIN. |
| MAK  | CHE     | 590    | 200 | 590        | 200 | SKIN. |
| TLV  | CYP     | 600    | 200 | 900        | 300 |       |
| TLV  | CZE     | 600    |     | 900        |     |       |
| AGW  | DEU     | 600    | 200 | 600        | 200 | SKIN. |
| MAK  | DEU     | 600    | 200 | 600        | 200 | SKIN. |
| TLV  | DNK     | 145    | 50  |            |     | SKIN. |
| VLA  | ESP     | 600    | 200 | 900        | 300 |       |
| TLV  | EST     | 600    | 200 | 900        | 300 |       |
| HTP  | FIN     |        |     | 300        | 100 | SKIN. |
| VLEP | FRA     | 600    | 200 | 900        | 300 | SKIN. |
| WEL  | GRB     | 600    | 200 | 899        | 300 | SKIN. |
| TLV  | GRC     | 600    | 200 | 900        | 300 |       |
| GVI  | HRV     | 600    | 200 | 900        | 300 | SKIN. |
| AK   | HUN     | 600    |     | 900        |     |       |
| OEL  | IRL     | 600    | 200 | 900        | 300 | SKIN. |
| TLV  | ITA     | 600    | 200 | 900        | 300 |       |
| RD   | LTU     | 600    | 200 | 900        | 300 |       |
| RV   | LVA     | 200    | 67  | 900        | 300 |       |

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| TLV       | NOR | 220 | 75  |     |     |
| NDS       | POL | 450 |     | 900 |     |
| NPHV      | SVK | 600 | 200 | 900 |     |
| MAK       | SWE | 150 | 50  | 300 | 100 |
| ESD       | TUR | 600 | 200 | 900 | 300 |
| OEL       | EU  | 600 | 200 | 900 | 300 |
| TLV-ACGIH |     | 590 | 200 | 885 | 300 |

### Predicted no-effect concentration - PNEC.

|   |        |         |
|---|--------|---------|
| Normal value in fresh water                           | 55,8   | mg/l    |
| Normal value in marine water                          | 55,8   | mg/l    |
| Normal value for fresh water sediment                 | 284,74 | mg/kg/d |
| Normal value for marine water sediment                | 284,74 | mg/kg/d |
| Normal value for water, intermittent release          | 55,8   | mg/l    |
| Normal value of STP microorganisms                    | 709    | mg/l    |
| Normal value for the food chain (secondary poisoning) | 1000   | mg/kg   |
| Normal value for the terrestrial compartment          | 22,5   | mg/kg/d |

### Health - Derived no-effect level - DNEL / DMEL

| Route of exposure | Effects on consumers. |                |               | Effects on workers |             |                |               |                  |
|-------------------|-----------------------|----------------|---------------|--------------------|-------------|----------------|---------------|------------------|
|                   | Acute local           | Acute systemic | Chronic local | Chronic systemic   | Acute local | Acute systemic | Chronic local | Chronic systemic |
| Oral.             |                       |                | VND           | 31 mg/kg bw/d      |             |                |               |                  |
| Inhalation.       |                       |                | VND           | 106 mg/m3          |             |                | VND           | 600 mg/m3        |
| Skin.             |                       |                | VND           | 412 mg/kg bw/d     |             |                | VND           | 1161 mg/kg bw/d  |

### HYDROCARBONS, C9, AROMATICS

#### Health - Derived no-effect level - DNEL / DMEL

| Route of exposure | Effects on consumers. |                |               | Effects on workers |             |                |               |                  |
|-------------------|-----------------------|----------------|---------------|--------------------|-------------|----------------|---------------|------------------|
|                   | Acute local           | Acute systemic | Chronic local | Chronic systemic   | Acute local | Acute systemic | Chronic local | Chronic systemic |
| Oral.             |                       |                | VND           | 11 mg/kg bw/d      |             |                |               |                  |
| Inhalation.       |                       |                | VND           | 32 mg/m3           |             |                | VND           | 150 mg/m3        |
| Skin.             |                       |                | VND           | 11 mg/kg bw/d      |             |                | VND           | 25 mg/kg bw/d    |

### ETHYL ACETATE

#### Threshold Limit Value.

| Type | Country | TWA/8h |     | STEL/15min |     |
|------|---------|--------|-----|------------|-----|
|      |         | mg/m3  | ppm | mg/m3      | ppm |
| MAK  | AUS     | 1050   | 300 | 2100       | 600 |
| VLEP | BEL     | 1461   | 400 |            |     |
| TLV  | BGR     | 800    |     |            |     |
| VEL  | CHE     | 1400   | 400 | 2800       | 800 |
| MAK  | CHE     | 1400   | 400 | 2800       | 800 |
| TLV  | CZE     | 700    |     | 900        |     |
| AGW  | DEU     | 1500   | 400 | 3000       | 800 |
| MAK  | DEU     | 1500   | 400 | 3000       | 800 |
| TLV  | DNK     | 540    | 150 |            |     |
| VLA  | ESP     | 1460   | 400 |            |     |
| TLV  | EST     | 500    | 150 | 1100       | 300 |
| HTP  | FIN     | 1100   | 300 | 1800       | 500 |
| VLEP | FRA     | 1400   | 400 |            |     |
| WEL  | GRB     |        | 200 |            | 400 |

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| TLV       | GRC | 1400 | 400 |          |         |
| GVI       | HRV |      | 200 |          | 400     |
| AK        | HUN | 1400 |     | 1400     |         |
| OEL       | IRL |      | 200 |          | 400     |
| RD        | LTU | 500  | 150 | 1100 (C) | 300 (C) |
| RV        | LVA | 200  |     |          |         |
| OEL       | NLD | 550  |     | 1100     |         |
| TLV       | NOR | 550  | 150 |          |         |
| NDS       | POL | 200  |     | 600      |         |
| NPHV      | SVK | 1500 | 400 | 3000     |         |
| MAK       | SWE | 500  | 150 | 1100     | 300     |
| TLV-ACGIH |     | 1441 | 400 |          |         |

### Predicted no-effect concentration - PNEC.

|   |       |         |
|---|-------|---------|
| Normal value in fresh water                           | 0,24  | mg/l    |
| Normal value in marine water                          | 0,024 | mg/l    |
| Normal value for fresh water sediment                 | 1,15  | mg/kg/d |
| Normal value for marine water sediment                | 0,115 | mg/kg/d |
| Normal value for water, intermittent release          | 1,65  | mg/l    |
| Normal value of STP microorganisms                    | 650   | mg/l    |
| Normal value for the food chain (secondary poisoning) | 200   | mg/kg   |
| Normal value for the terrestrial compartment          | 0,148 | mg/kg/d |
| Normal value for the atmosphere                       | NPI   |         |

### Health - Derived no-effect level - DNEL / DMEL

| Route of exposure | Effects on consumers. |                |               | Effects on workers |             |                |               |                  |
|-------------------|-----------------------|----------------|---------------|--------------------|-------------|----------------|---------------|------------------|
|                   | Acute local           | Acute systemic | Chronic local | Chronic systemic   | Acute local | Acute systemic | Chronic local | Chronic systemic |
| Oral.             |                       |                | VND           | 4,5 mg/kg bw/d     |             |                |               |                  |
| Inhalation.       | 734 mg/m3             | 734 mg/m3      | 367 mg/m3     | 367 mg/m3          | 1468 mg/m3  | 1468 mg/m3     | 734 mg/m3     | 734 mg/m3        |
| Skin.             |                       |                | VND           | 37 mg/kg bw/d      |             |                | VND           | 63 mg/kg bw/d    |

### XYLENE (MIXTURE OF ISOMERS)

#### Threshold Limit Value.

| Type | Country | TWA/8h |     | STEL/15min |     |       |
|------|---------|--------|-----|------------|-----|-------|
|      |         | mg/m3  | ppm | mg/m3      | ppm |       |
| MAK  | AUS     | 221    | 50  | 442        | 100 | SKIN. |
| VLEP | BEL     | 221    | 50  | 442        | 100 | SKIN. |
| TLV  | BGR     | 221    |     | 442        |     | SKIN. |
| TLV  | CYP     | 221    | 50  | 442        | 100 | SKIN. |
| TLV  | CZE     | 200    |     | 400        |     | SKIN. |
| AGW  | DEU     | 440    | 100 | 880        | 200 | SKIN. |
| MAK  | DEU     | 440    | 100 | 880        | 200 | SKIN. |
| VLA  | ESP     | 221    | 50  | 442        | 100 | SKIN. |
| TLV  | EST     | 221    | 50  | 442        | 100 | SKIN. |
| HTP  | FIN     | 220    | 50  | 440        | 100 | SKIN. |
| VLEP | FRA     | 221    | 50  | 442        | 100 | SKIN. |
| WEL  | GRB     | 220    | 50  | 441        | 100 |       |
| TLV  | GRC     | 435    | 100 | 650        | 150 |       |
| GVI  | HRV     | 221    | 50  | 442        | 100 | SKIN. |
| AK   | HUN     | 221    |     | 442        |     | SKIN. |
| OEL  | IRL     | 221    | 50  | 442        | 100 | SKIN. |



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| TLV       | ITA | 221 | 50  | 442 | 100 | SKIN. |
| OEL       | NLD | 210 |     | 442 |     | SKIN. |
| TLV       | NOR | 108 | 25  |     |     | SKIN. |
| NDS       | POL | 100 |     |     |     |       |
| NPHV      | SVK | 221 | 50  | 442 |     | SKIN. |
| MV        | SVN | 221 | 50  |     |     | SKIN. |
| MAK       | SWE | 221 | 50  | 442 | 100 | SKIN. |
| ESD       | TUR | 221 | 50  | 442 | 100 | SKIN. |
| OEL       | EU  | 221 | 50  | 442 | 100 | SKIN. |
| TLV-ACGIH |     | 434 | 100 | 651 | 150 |       |

### Predicted no-effect concentration - PNEC.

|  |       |         |
|--|-------|---------|
| Normal value in fresh water                  | 0,327 | mg/l    |
| Normal value in marine water                 | 0,327 | mg/l    |
| Normal value for fresh water sediment        | 12,46 | mg/kg/d |
| Normal value for marine water sediment       | 12,46 | mg/kg/d |
| Normal value for water, intermittent release | 0,327 | mg/l    |
| Normal value of STP microorganisms           | 6,58  | mg/l    |
| Normal value for the terrestrial compartment | 2,31  | mg/kg/d |

### Health - Derived no-effect level - DNEL / DMEL

| Route of exposure | Effects on consumers.<br>Acute local | Acute systemic | Chronic local | Chronic systemic | Effects on workers<br>Acute local | Acute systemic | Chronic local | Chronic systemic |
|-------------------|--------------------------------------|----------------|---------------|------------------|-----------------------------------|----------------|---------------|------------------|
| Oral.             |                                      |                | VND           | 1,6 mg/kg bw/d   |                                   |                |               |                  |
| Inhalation.       | 174 mg/m3                            | 174 mg/m3      | VND           | 14,8 mg/m3       | 289 mg/m3                         | 289 mg/m3      | VND           | 77 mg/m3         |
| Skin.             |                                      |                | VND           | 108 mg/kg bw/d   |                                   |                | VND           | 180 mg/kg bw/d   |

### TITANIUM TETRABUTANOLATE

#### Predicted no-effect concentration - PNEC.

|  |       |         |
|--|-------|---------|
| Normal value in fresh water                  | 0,08  | mg/l    |
| Normal value in marine water                 | 0,008 | mg/l    |
| Normal value for fresh water sediment        | 0,69  | mg/kg/d |
| Normal value for marine water sediment       | 0,007 | mg/kg/d |
| Normal value for water, intermittent release | 2,25  | mg/l    |
| Normal value of STP microorganisms           | 65    | mg/l    |
| Normal value for the terrestrial compartment | 0,017 | mg/kg/d |

### Health - Derived no-effect level - DNEL / DMEL

| Route of exposure | Effects on consumers.<br>Acute local | Acute systemic | Chronic local | Chronic systemic | Effects on workers<br>Acute local | Acute systemic | Chronic local | Chronic systemic |
|-------------------|--------------------------------------|----------------|---------------|------------------|-----------------------------------|----------------|---------------|------------------|
| Oral.             | NPI                                  | NPI            | VND           | 3,75 mg/kg bw/d  |                                   |                |               |                  |
| Inhalation.       | VND                                  | VND            | VND           | 152 mg/m3        | NPI                               | NPI            | VND           | 127 mg/m3        |
| Skin.             | NPI                                  | NPI            | VND           | 37,5 mg/kg bw/d  | NPI                               | NPI            | VND           | VND              |

### ETHYL SILICATE

#### Threshold Limit Value.

| Type | Country | TWA/8h |     | STEL/15min |     |
|------|---------|--------|-----|------------|-----|
|      |         | mg/m3  | ppm | mg/m3      | ppm |
| MAK  | AUS     | 170    | 20  | 340        | 40  |
| TLV  | BGR     | 100    |     |            |     |
| TLV  | CZE     | 50     |     | 200        |     |
| AGW  | DEU     | 12     | 1,4 | 12         | 1,4 |
| MAK  | DEU     | 86     | 10  | 86         | 10  |
| TLV  | DNK     | 85     | 10  |            |     |
| VLA  | ESP     | 87     | 10  |            |     |

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|           |     |     |    |     |    |
|-----------|-----|-----|----|-----|----|
| HTP       | FIN | 86  | 10 | 170 | 20 |
| VLEP      | FRA | 85  | 10 |     |    |
| TLV       | GRC | 170 | 20 | 255 | 30 |
| OEL       | IRL | 85  | 10 | 255 | 30 |
| OEL       | NLD | 10  |    |     |    |
| TLV       | NOR | 85  | 10 |     |    |
| NDS       | POL | 80  |    |     |    |
| TLV-ACGIH |     | 85  | 10 |     |    |

SKIN.

### Predicted no-effect concentration - PNEC.

|  |       |         |
|--|-------|---------|
| Normal value in fresh water                  | 0,19  | mg/l    |
| Normal value in marine water                 | 0,019 | mg/l    |
| Normal value for fresh water sediment        | 0,83  | mg/kg/d |
| Normal value for marine water sediment       | 0,083 | mg/kg/d |
| Normal value for water, intermittent release | 10    | mg/l    |
| Normal value of STP microorganisms           | 4000  | mg/l    |
| Normal value for the terrestrial compartment | 0,05  | mg/kg/d |

### Health - Derived no-effect level - DNEL / DMEL

| Route of exposure | Effects on consumers. |                |               |                  | Effects on workers |                |               |                  |
|-------------------|-----------------------|----------------|---------------|------------------|--------------------|----------------|---------------|------------------|
|                   | Acute local           | Acute systemic | Chronic local | Chronic systemic | Acute local        | Acute systemic | Chronic local | Chronic systemic |
| Oral.             | VND                   | NPI            | VND           | NPI              |                    |                |               |                  |
| Inhalation.       | 14 mg/m3              | 14 mg/m3       | 14 mg/m3      | 14 mg/m3         | 85 mg/m3           | 85 mg/m3       | 85 mg/m3      | 85 mg/m3         |
| Skin.             | NPI                   | 3 mg/kg bw/d   | NPI           | 3 mg/kg bw/d     | NPI                | 56 mg/kg bw/d  | NPI           | 56 mg/kg bw/d    |

### ETHANOL

#### Threshold Limit Value.

| Type | Country | TWA/8h |      | STEL/15min |      |
|------|---------|--------|------|------------|------|
|      |         | mg/m3  | ppm  | mg/m3      | ppm  |
| MAK  | AUS     | 1900   | 1000 | 3800       | 2000 |
| VLEP | BEL     | 1907   | 1000 |            |      |
| TLV  | BGR     | 1000   |      |            |      |
| TLV  | CZE     | 1000   |      | 3000       |      |
| AGW  | DEU     | 960    | 500  | 1920       | 1000 |
| MAK  | DEU     | 960    | 500  | 1920       | 1000 |
| TLV  | DNK     | 1900   | 1000 |            |      |
| VLA  | ESP     |        |      | 1910       | 1000 |
| TLV  | EST     | 1000   | 500  | 1900       | 1000 |
| HTP  | FIN     | 1900   | 1000 | 2500       | 1300 |
| VLEP | FRA     | 1900   | 1000 | 9500       | 5000 |
| WEL  | GRB     | 1920   | 1000 |            |      |
| TLV  | GRC     | 1900   | 1000 |            |      |
| GVI  | HRV     | 1900   | 1000 |            |      |
| AK   | HUN     | 1900   |      | 7600       |      |
| OEL  | IRL     |        |      |            | 1000 |
| RD   | LTU     | 1000   | 500  | 1900       | 1000 |
| RV   | LVA     | 1000   |      |            |      |
| OEL  | NLD     | 260    |      | 1900       |      |
| TLV  | NOR     | 950    | 500  |            |      |
| NDS  | POL     | 1900   |      |            |      |
| NPHV | SVK     | 960    | 500  | 1920       |      |

SKIN.

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|-----------|-----|------|-----|------|------|
| MAK       | SWE | 1000 | 500 | 1900 | 1000 |
| TLV-ACGIH |     |      |     | 1884 | 1000 |

### Predicted no-effect concentration - PNEC.

|  |      |         |
|--|------|---------|
| Normal value in fresh water                  | 0,96 | mg/l    |
| Normal value in marine water                 | 0,79 | mg/l    |
| Normal value for fresh water sediment        | 3,6  | mg/kg/d |
| Normal value for marine water sediment       | 2,9  | mg/kg/d |
| Normal value for water, intermittent release | 2,75 | mg/l    |
| Normal value of STP microorganisms           | 580  | mg/l    |
| Normal value for the terrestrial compartment | 0,63 | mg/kg/d |

### Health - Derived no-effect level - DNEL / DMEL

| Route of exposure | Effects on consumers. |                |               | Chronic systemic | Effects on workers |                |               |                  |
|-------------------|-----------------------|----------------|---------------|------------------|--------------------|----------------|---------------|------------------|
|                   | Acute local           | Acute systemic | Chronic local |                  | Acute local        | Acute systemic | Chronic local | Chronic systemic |
| Oral.             | VND                   | VND            | VND           | 87 mg/kg bw/d    |                    |                |               |                  |
| Inhalation.       | 950 mg/m3             | VND            | VND           | 114 mg/m3        | 1900 mg/m3         | VND            | VND           | 950 mg/m3        |
| Skin.             | VND                   | VND            | VND           | 206 mg/kg bw/d   | VND                | VND            | VND           | 343 mg/kg bw/d   |

### BUTANOL

#### Threshold Limit Value.

| Type      | Country | TWA/8h |     | STEL/15min |        |       |
|-----------|---------|--------|-----|------------|--------|-------|
|           |         | mg/m3  | ppm | mg/m3      | ppm    |       |
| MAK       | AUS     | 150    | 50  | 600        | 200    |       |
| VLEP      | BEL     | 62     | 20  |            |        |       |
| VEL       | CHE     | 150    | 50  | 150        | 50     |       |
| MAK       | CHE     | 150    | 50  | 150        | 50     |       |
| TLV       | CZE     | 300    |     | 600        |        | SKIN. |
| AGW       | DEU     | 310    | 100 | 310        | 100    |       |
| MAK       | DEU     | 310    | 100 | 310        | 100    |       |
| TLV       | DNK     | 150    | 50  |            |        | SKIN. |
| VLA       | ESP     | 61     | 20  | 154        | 50     | SKIN. |
| TLV       | EST     | 45     | 15  | 90 (C)     | 30 (C) | SKIN. |
| VLEP      | FRA     |        |     | 150        | 50     |       |
| WEL       | GRB     |        |     | 154        | 50     | SKIN. |
| TLV       | GRC     | 300    | 100 | 300        | 100    |       |
| GVI       | HRV     |        |     | 154        | 50     | SKIN. |
| AK        | HUN     | 45     |     | 90         |        |       |
| OEL       | IRL     |        | 20  |            |        | SKIN. |
| RD        | LTU     | 45     | 15  | 90 (C)     | 30 (C) | SKIN. |
| RV        | LVA     | 10     |     |            |        |       |
| OEL       | NLD     |        |     | 45         |        |       |
| NDS       | POL     | 50     |     | 150        |        |       |
| NPHV      | SVK     | 310    | 100 | 310        |        |       |
| MAK       | SWE     | 45     | 15  | 90         | 30     | SKIN. |
| TLV-ACGIH |         | 61     | 20  |            |        |       |

Legend:

(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.

VND = hazard identified but no DNEL/PNEC available ; NEA = no exposure expected ; NPI = no hazard identified.

XYLENI: Biological Exposure Indices (IBE): Hippuric Acid in urine: 1.5 g/g creatinina. Sampling time: End of shift. (ACGIH 2014).

METHYL ETHYL KETONE: Biological Exposure Indices (IBE): methyl ethyl ketone in urine: 2 mg/l. Sampling time: End of shift (ACGIH 2014).

**8.2. Exposure controls.**

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration. Personal protective equipment must be CE marked, showing that it complies with applicable standards.

Provide an emergency shower with face and eye wash station.

**HAND PROTECTION**

Protect hands with category III work gloves (see standard EN 374).

The following should be considered when choosing work glove material: compatibility, degradation, failure time and permeability.

The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves' wear time depends on the duration and type of use.

**SKIN PROTECTION**

Wear category I professional long-sleeved overalls and safety footwear (see Directive 89/686/EEC and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

Consider the appropriateness of providing antistatic clothing in the case of working environments in which there is a risk of explosion.

**EYE PROTECTION**

Wear airtight protective goggles (see standard EN 166).

**RESPIRATORY PROTECTION**

If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, wear a mask with a type AX filter, whose limit of use will be defined by the manufacturer (see standard EN 14387). In the presence of gases or vapours of various kinds and/or gases or vapours containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required.

Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered. The protection provided by masks is in any case limited.

If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus (in compliance with standard EN 137) or external air-intake breathing apparatus (in compliance with standard EN 138). For a correct choice of respiratory protection device, see standard EN 529.

**ENVIRONMENTAL EXPOSURE CONTROLS.**

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

Product residues must not be indiscriminately disposed of with waste water or by dumping in waterways.

**SECTION 9. Physical and chemical properties.**

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

|                                 |                                     |
|---------------------------------|-------------------------------------|
| Appearance                      | liquid                              |
| Colour                          | transparent                         |
| Odour                           | characteristic of solvent           |
| Odour threshold.                | 10 ppm, (METHYL ETHYL KETONE)       |
| pH.                             | Not applicable.                     |
| Melting point / freezing point. | -86°C (NIOSH) (METHYL ETHYL KETONE) |
| Initial boiling point.          | > 35 °C.                            |
| Boiling range.                  | Not applicable.                     |

|  |   |
|--|---|
| Flash point.                           | < 23 °C.  |
| Evaporation rate                       | 4,60 (N-butyl ACETATE=1, PPG TRUEFINISH) (METHYL ETHYL KETONE). |
| Flammability (solid, gas)              | Not applicable.   |
| Lower inflammability limit.            | Not applicable.   |
| Upper inflammability limit.            | Not applicable.   |
| Lower explosive limit.                 | 1,8 Vol% (NIOSH) (METHYL ETHYL KETONE).                         |
| Upper explosive limit.                 | 11,5 Vol% (NIOSH) (METHYL ETHYL KETONE).                        |
| Vapour pressure.                       | 10,5 kPa (T=20°C) (NIOSH) (METHYL ETHYL KETONE)                 |
| Vapour density                         | 2,41 (air=1) (NIOSH) (METHYL ETHYL KETONE)                      |
| Relative density.                      | 0,800 Kg/l  |
| Solubility                             | soluble in organic solvents                                     |
| Partition coefficient: n-octanol/water | 0,29 log Pow (NIOSH) (METHYL ETHYL KETONE)                      |
| Auto-ignition temperature.             | 505°C (NIOSH) (METHYL ETHYL KETONE)                             |
| Decomposition temperature.             | Not applicable.   |
| Viscosity                              | 0,4 mPas (dynamic, T=25°C) (METHYL ETHYL KETONE)                |
| Explosive properties                   | Not applicable.   |
| Oxidising properties                   | Not applicable.   |

**9.2. Other information.**

|                              |                           |
|------------------------------|---------------------------|
| VOC (Directive 2010/75/EC) : | 98,71 % - 789,67 g/litre. |
| VOC (volatile carbon) :      | Not available.            |

**SECTION 10. Stability and reactivity.**

**10.1. Reactivity.**

There are no particular risks of reaction with other substances in normal conditions of use.

BUTANONE: reacts with light metals like aluminium, and with strong oxidising agents; attacks various types of plastic. Decomposes under the effect of heat.

ETHYL ACETATE: decomposes slowly into acetic acid and ethanol under the effect of light, air and water.

**10.2. Chemical stability.**

The product is stable in normal conditions of use and storage.

**10.3. Possibility of hazardous reactions.**

The vapours may also form explosive mixtures with the air.

XYLENE (MIXTURE OF ISOMERS): stable, but may develop violent reactions in the presence of strong oxidising agents such as sulphuric and nitric acids and perchlorates. May form explosive mixtures with the air.

BUTANONE: may generate peroxides on contact with air, light or oxidising agents. Risk of explosion on contact with: hydrogen peroxide and sulphuric acid. It may react dangerously with: oxidising agents, trichloromethane, alkalis. Forms explosive mixtures with the air.

ETHYL ACETATE: risk of explosion on contact with: metals, alkalis, hydrides. oleum. can react violently with: fluoride, strong oxidising agents, chlorosulfuric acid, potassium tert-butoxide. Forms explosive mixtures with the air.

**10.4. Conditions to avoid.**

Avoid overheating. Avoid bunching of electrostatic charges. Avoid all sources of ignition.

BUTANONE: avoid exposure to sources of heat.

ETHYL ACETATE: avoid exposure to light, sources of heat and naked flames.

#### 10.5. Incompatible materials.

BUTANONE: strong oxidising agents, inorganic acids, ammonia, copper and chloroform.

ETHYL ACETATE: acids and bases, strong oxidising agents; aluminium and some plastics, nitrates and chlorosulphuric acid.

#### 10.6. Hazardous decomposition products.

In the event of thermal decomposition or fire, gases and vapours that are potentially dangerous to health may be released.

### SECTION 11. Toxicological information.

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification. It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

The introduction of even small quantities of this liquid into the respiratory system in case of ingestion or vomit may cause bronchopneumonia and pulmonary edema.

Acute effects: stinging eyes. Symptoms may include: rubescence, edema, pain and lachrymation. Ingestion may cause health problems, including stomach pain and sting, nausea and sickness.

This product contains highly volatile substances, which may cause serious depression of the central nervous system (CNS) and have negative effects, such as drowsiness, dizziness, slow reflexes, narcosis.

This product may have a degreasing action on the skin, producing dryness and chapped skin after repeated exposure.

#### 11.1. Information on toxicological effects.

##### Data refers to the mix:

ACUTE TOXICITY: No data available

SKIN CORROSION/IRRITATION: No data available

SERIOUS EYE DAMAGE/IRRITATION: Causes serious eye irritation (section 3.2 of the safety data sheet)

RESPIRATORY OR SKIN SENSITISATION: No data available

GERM CELL MUTAGENICITY: No data available

CARCINOGENICITY: No data available

REPRODUCTIVE TOXICITY: No data available

STOT-SINGLE EXPOSURE: May cause drowsiness or dizziness. (section 3.2 of the safety data sheet).

STOT-REPEATED EXPOSURE: Repeated exposure may cause skin dryness or cracking (section 3.2 of the safety data sheet).

ASPIRATION HAZARD: May be fatal if swallowed and enters airways. (section 3.2 of the safety data sheet).

##### Data relating to substances hazardous mixture:

**XYLENE (MIXTURE OF ISOMERS):** has a toxic effect on the CNS (encephalopathies). Irritating to the skin, conjunctivae, cornea and respiratory apparatus.

ACUTE TOXICITY:

LD50 (Oral).3523 mg/kg Rat (equivalent or similar to EU Method B.1 )

LD50 (Dermal).4200 mg/kg Rabbit (Industrial Medicine 39, 215-200, 1970)

LC50 (Inhalation).26 mg/l/4h Rat(equivalent or similar to EU Method B.2)

SKIN CORROSION/IRRITATION: Causes skin irritation. (test in vivo, Rabbit, Industrial Medicine 39, 215-200.)

SERIOUS EYE DAMAGE/IRRITATION: Causes eyes irritation (Draize Test, Rabbit, exposure time 24h)

RESPIRATORY OR SKIN SENSITISATION: not sensitizing. (mouse, OECD Guideline 429)

GERM CELL MUTAGENICITY: negative, (Mouse, test in vivo, Equivalent or similar to OECD Guideline 478)

CARCINOGENICITY: negative, (mouse, Equivalent or similar to EU Method B.32)

REPRODUCTIVE TOXICITY: NOEC = 100 ppm (parental systemic toxicity), NOAEC >500 ppm (reproductive and developmental toxicity) (Rat, Equivalent or similar to EPA OPPTS 870.3800)

STOT-SINGLE EXPOSURE: May cause respiratory irritation. (Environmental Toxicology and Pharmacology, Vol 14, pp 129-137)

STOT-REPEATED EXPOSURE: Causes damage to organs: central nervous system, liver and kidneys, through prolonged or repeated exposure, (Rat, Metodo OECD Guideline 408).

ASPIRATION HAZARD: May be fatal if swallowed and enters airways. (Annex VI, REGULATION (EC) No 1272/2008).

**METHYL ETHYL KETONE**

**ACUTE TOXICITY:**

LD50 (Oral).2193 mg/kg Rat (read-across from supporting substance, Equivalent or similar to OECD Guideline 423)

LD50 (Dermal).6480 mg/kg Rabbit (Shell Chemical Company. Vol. MSDS-5390-4)

LC50 (Inhalation).5000 ppm Rat (Ref. SDS Brenntag)

SKIN CORROSION/IRRITATION: negative (Rabbit, Read-across from supporting substance, OECD Guideline 404, GLP)

SERIOUS EYE DAMAGE/IRRITATION: Causes eyes irritation (Rabbit, Equivalent or similar to OECD Guideline 405 )

RESPIRATORY OR SKIN SENSITISATION: negative (Guinea pig, OECD Guideline 406, GLP)

GERM CELL MUTAGENICITY: negative (Mouse, Equivalent or similar to OECD Guideline 474)

CARCINOGENICITY: No data available

REPRODUCTIVE TOXICITY: NOAEL = 1644 mg/kg/day (Rat, Read-across from supporting substance, Equivalent or similar to OECD Guideline 416)

STOT-SINGLE EXPOSURE: May cause drowsiness or dizziness. (Annex VI, REGULATION (EC) No 1272/2008)

STOT-REPEATED EXPOSURE: NOAEC (inalation) = 5041 ppm (Rat, Equivalente o similare to OECD Guideline 413, GLP)

ASPIRATION HAZARD: No data available.

**ETHYL ACETATE**

**ACUTE TOXICITY:**

LD50 (Oral).4934 mg/kg Rabbit (Equivalent to OECD 401)

LD50 (Dermal).20000 mg/kg Rabbit (Publication Am Ind Hyg Ass J, 23, 95)

LC50 (Inhalation).22.5 mg/l/6h Rat (40 CFR Part 799 (58 FR 40262))

SKIN CORROSION/IRRITATION: Skin slightly irritating (Rabbit, OECD 404)

SERIOUS EYE DAMAGE/IRRITATION: irritating to eyes (Annex VI, REGULATION (EC) No 1272/2008).

RESPIRATORY OR SKIN SENSITISATION: not sensitizing (Guinea pig, OECD Guideline 406)

GERM CELL MUTAGENICITY: negative, (Hamster, Equivalent or similar to OECD Guideline 474)

CARCINOGENICITY: No data available.

REPRODUCTIVE TOXICITY: NOAEL = 26400 mg/kg (Mouse, Read-across from supporting substance, equivalent or similar to OECD Guideline 416)

STOT-SINGLE EXPOSURE: It can cause respiratory irritation (Annex VI, REGULATION (EC) No 1272/2008).

STOT-REPEATED EXPOSURE:

Orale: NOAEL = 900 mg/kg bw/day (Rat, Equivalent or similar to EPA OTS 795.2600, GLP)

Inalation: NOAEL = 350 ppm (Rat, EPA OTS 798.2450, GLP)

ASPIRATION HAZARD: May be fatal if swallowed and enters airways. (Annex VI, REGULATION (EC) No 1272/2008).

**HYDROCARBONS, C9, AROMATICS**

**ACUTE TOXICITY:**

LD50 (Oral).3492 mg/kg Rat (Study report ECHA)

LD50 (Dermal).3160 mg/kg Rabbit (Equivalent or similar to OECD Guideline 402)

LC50 (Inhalation).6193 ppm/4h Rat (Equivalent or similar to OECD Guideline 403, GLP)

SKIN CORROSION/IRRITATION: Causes skin irritation. (Ref. SDS supplier)

SERIOUS EYE DAMAGE/IRRITATION: Causes eye irritation. (Ref. SDS supplier)

STOT-SINGLE EXPOSURE: May cause respiratory irritation and ay cause drowsiness or dizziness. (Ref. SDS supplier)

ASPIRATION HAZARD: May be fatal if swallowed and enters airways. (Ref. SDS supplier).

**SECTION 12. Ecological information.**

This product is dangerous for the environment and the aquatic organisms. In the long term, it have negative effects on aquatic environment.

**12.1. Toxicity.**

**XYLENE (MIXTURE OF ISOMERS)**

|                             |  |
|-----------------------------|--|
| LC50 - for Fish.            | 2,6 mg/l/96h Oncorhynchus mykiss (OECD TG 203)   |
| Chronic NOEC for Fish.      | 1,3 mg/l 56d Oncorhynchus mykiss (Appl. Sci. Branch, Eng. Res. Cent. Denver, CO: 15p.) |
| Chronic NOEC for Crustacea. | 1,17 mg/l 7d Ceriodaphnia dubia (Ecotoxicology and Environmental Safety 39, 136-146)   |

**METHYL ETHYL KETONE**

|                                    |   |
|------------------------------------|---|
| LC50 - for Fish.                   | 2993 mg/l/96h Pimephales promelas (OECD Guideline 203, GLP)       |
| EC50 - for Crustacea.              | 308 mg/l/48h Daphnia magna (OECD Guideline 202, GLP)              |
| EC50 - for Algae / Aquatic Plants. | 1972 mg/l/72h Selenastrum capricornutum (OECD Guideline 201, GLP) |

**ETHYL ACETATE**

|                  |   |
|------------------|---|
| LC50 - for Fish. | 230 mg/l/96h Pimephales promelas (US EPA method E03-05) |
|------------------|---|

EC50 - for Crustacea. 165 mg/l/48h Daphnia (Rif. SDS fornitore)  
 Chronic NOEC for Crustacea. 100 mg/l Scenedesmus subspicatus (OECD Guideline 201, GLP)

**HYDROCARBONS, C9, AROMATICS**

LC50 - for Fish. 9,2 mg/l/96h Oncorhynchus mykiss (OECD Guideline 203, GLP)  
 EC50 - for Crustacea. 3,2 mg/l/48h Daphnia magna (OECD Guideline 202, GLP)  
 EC50 - for Algae / Aquatic Plants. 2,6 mg/l/72h Raphidocelis subcapitata (OECD Guideline 201, GLP)

**12.2. Persistence and degradability.**

**XYLENE (MIXTURE OF ISOMERS)**

Solubility in water. mg/l 100 - 1000 Handbook of aqueous solubility data.

Rapidly biodegradable.

OECD Guideline 301 F, GLP

**METHYL ETHYL KETONE**

Solubility in water. > 10000 mg/l

Rapidly biodegradable.

(OECD Guideline 301 D, GLP)

**ETHYL ACETATE**

Solubility in water. > 10000 mg/l

Rapidly biodegradable.

(Publication JWPCF 46(1), p63-77)

**HYDROCARBONS, C9, AROMATICS**

Rapidly biodegradable.

Biodegradazione 78% in 28 d (OECD Guideline 301 F)

**12.3. Bioaccumulative potential.**

**XYLENE (MIXTURE OF ISOMERS)**

Partition coefficient: n-octanol/water. 3,12 American Chemical Society, Washington DC  
 BCF. 25,9 Appl. Sci. Branch, Eng. Res. Cent. Denver, CO: 15p.

**METHYL ETHYL KETONE**

Partition coefficient: n-octanol/water. 0,3

**ETHYL ACETATE**

Partition coefficient: n-octanol/water. 0,68  
 BCF. 30

**12.4. Mobility in soil.**



XYLENE (MIXTURE OF ISOMERS)

Partition coefficient: soil/water.

2,73 equivalent or similar to OECD Guideline 121

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

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

#### 12.6. Other adverse effects.

Information not available.

### SECTION 13. Disposal considerations.

#### 13.1. Waste treatment methods.

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.

Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.

Waste transportation may be subject to ADR restrictions.

CONTAMINATED PACKAGING

Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

### SECTION 14. Transport information.

#### 14.1. UN number.

ADR / RID, IMDG, IATA: 1993

#### 14.2. UN proper shipping name.

ADR / RID: FLAMMABLE LIQUID, N.O.S. (Ethyl methyl keton ,Hydrocarbons, C9, aromatics) MIXTURE

IMDG: FLAMMABLE LIQUID, N.O.S. (Ethyl methyl keton ,Hydrocarbons, C9, aromatics) MIXTURE

IATA: FLAMMABLE LIQUID, N.O.S. (Ethyl methyl keton ,Hydrocarbons, C9, aromatics) MIXTURE

#### 14.3. Transport hazard class(es).

ADR / RID: Class: 3 Label: 3

IMDG: Class: 3 Label: 3

IATA: Class: 3 Label: 3



#### 14.4. Packing group.

ADR / RID, IMDG, IATA: II

**14.5. Environmental hazards.**

ADR / RID: NO

**14.6. Special precautions for user.**

|            |                       |                         |                                |
|------------|-----------------------|-------------------------|--------------------------------|
| ADR / RID: | HIN - Kemler: 33      | Limited Quantities: 1 L | Tunnel restriction code: (D/E) |
|            | Special Provision: -  |                         |                                |
| IMDG:      | EMS: F-E, S-E,        | Limited Quantities: 1 L |                                |
| IATA:      | Cargo:                | Maximum quantity: 60 L  | Packaging instructions: 364    |
|            | Pass.:                | Maximum quantity: 5 L   | Packaging instructions: 353    |
|            | Special Instructions: | A3                      |                                |

**14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code.**

Information not relevant.

**SECTION 15. Regulatory information.**

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

Seveso category. P5b FLAMMABLE LIQUIDS

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006.

Product.

Point *3. Liquid substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008:*  
*(a) hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F;*  
*(b) hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10;*  
*(c) hazard class 4.1;*  
*(d) hazard class 5.1.*

Point *40. Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to that Regulation or not.*

Substances in Candidate List (Art. 59 REACH).

None.

Substances subject to authorisation (Annex XIV REACH).

None.

Substances subject to exportation reporting pursuant to (EC) Reg. 649/2012:

None.

Substances subject to the Rotterdam Convention:

None.

Substances subject to the Stockholm Convention:

None.

Healthcare controls.

Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

Product not intended for uses provided for by Dir. 2004/42/CE.

**15.2. Chemical safety assessment.**

A chemical safety assessment has been performed for the following contained substances.

METHYL ETHYL KETONE

HYDROCARBONS, C9, AROMATICS

ETHYL ACETATE

**SECTION 16. Other information.**

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

|                          |  |
|--------------------------|--|
| <b>Flam. Liq. 2</b>      | Flammable liquid, category 2                                       |
| <b>Flam. Liq. 3</b>      | Flammable liquid, category 3                                       |
| <b>Acute Tox. 4</b>      | Acute toxicity, category 4   |
| <b>Asp. Tox. 1</b>       | Aspiration hazard, category 1                                      |
| <b>STOT RE 2</b>         | Specific target organ toxicity - repeated exposure, category 2     |
| <b>Eye Irrit. 2</b>      | Eye irritation, category 2   |
| <b>Skin Irrit. 2</b>     | Skin irritation, category 2  |
| <b>STOT SE 3</b>         | Specific target organ toxicity - single exposure, category 3       |
| <b>Aquatic Chronic 2</b> | Hazardous to the aquatic environment, chronic toxicity, category 2 |
| <b>Aquatic Chronic 3</b> | Hazardous to the aquatic environment, chronic toxicity, category 3 |
| <b>H225</b>              | Highly flammable liquid and vapour.                                |
| <b>H226</b>              | Flammable liquid and vapour.                                       |
| <b>H312</b>              | Harmful in contact with skin.                                      |
| <b>H332</b>              | Harmful if inhaled.  |
| <b>H304</b>              | May be fatal if swallowed and enters airways.                      |
| <b>H373</b>              | May cause damage to organs through prolonged or repeated exposure. |
| <b>H319</b>              | Causes serious eye irritation.                                     |
| <b>H315</b>              | Causes skin irritation.  |
| <b>H335</b>              | May cause respiratory irritation.                                  |

|               |   |
|---------------|---|
| <b>H336</b>   | May cause drowsiness or dizziness.                    |
| <b>H411</b>   | Toxic to aquatic life with long lasting effects.      |
| <b>H412</b>   | Harmful to aquatic life with long lasting effects.    |
| <b>EUH066</b> | Repeated exposure may cause skin dryness or cracking. |

**LEGEND:**

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- CAS NUMBER: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE NUMBER: Identifier in ESIS (European archive of existing substances)
- CLP: EC Regulation 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX NUMBER: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: EC Regulation 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA STEL: Short-term exposure limit
- TWA: Time-weighted average exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

**GENERAL BIBLIOGRAPHY**

1. Regulation (EU) 1907/2006 (REACH) of the European Parliament
  2. Regulation (EU) 1272/2008 (CLP) of the European Parliament
  3. Regulation (EU) 790/2009 (I Atp. CLP) of the European Parliament
  4. Regulation (EU) 2015/830 of the European Parliament
  5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
  6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
  7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
  8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
  9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
- The Merck Index. - 10th Edition
  - Handling Chemical Safety
  - INRS - Fiche Toxicologique (toxicological sheet)
  - Patty - Industrial Hygiene and Toxicology
  - N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
  - ECHA website

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 Nome prodotto ISS: DRAI  
 Codice prodotto ISS: M8119

**Note for users:**

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.  
 This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.  
Provide appointed staff with adequate training on how to use chemical products.

**Training for workers:**

Worker training should include content, updates and duration depending on the risk profiles assigned to the business sectors they belong.

**Classification according to Regulation (EC) Nr. 1272/2008**

Flam. Liq. 2, H225

Eye Irrit. 2, H319

Asp. Tox. 1, H304

STOT SE 3, H336

Aquatic Chronic 3, H412

**Classification procedure**

Calculation method

Calculation method

Calculation method

Calculation method

Calculation method