Section Headings

**TitlesSAFETY DATA SHEET**

**NameDOW AGROSCIENCES S.A.S.**



9/6/18; BK – INC1751715

5/10/18; BK – INC1493276

1/10/18; BK – D81577

12/19/17; BK – INC1221350

12/18/17; BK – D79327

12/6/17; BK – INC1136996

12/4/17; BK – INC1136996

11/6/17; BK – D76181

11/3/17; BK – Lion

10/27/17; BK – D72771

9/6/18; BK – INC1751715

5/10/18; BK – INC1493276

1/10/18; BK – D81577

12/19/17; BK – INC1221350

12/18/17; BK – D79327

12/6/17; BK – INC1136996

12/4/17; BK - INC1136996

11/06/17; BK – D76181

11/03/17; BK – Lion

10/27/17; BK – D72771

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|  |  |
| --- | --- |
| **Product name:**  **DURSBAN™ 4 Insecticide** | **Issue Date:** 05/29/2019 |
| **Print Date:** 05/29/2019 | |

DOW AGROSCIENCES S.A.S. encourages you and expects you to read and understand the entire SDS as there is important information throughout the document. This SDS provides users with information relating to the protection of human health and safety at the workplace, protection of the environment and supports emergency response. Product users and applicators should primarily refer to the product label attached to or accompanying the product container.\_

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**1. PRODUCT AND COMPANY IDENTIFICATION\_**

**Product name:** DURSBAN™ 4 Insecticide\_

**\_**

**Recommended use of the chemical and restrictions on use\_**

**Identified uses:** Plant Protection Product Insecticide \_

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**COMPANY IDENTIFICATION**\_

DOW AGROSCIENCES S.A.S.\_

IMMEUBLE LE CAMPUS\_

6, RUE JEAN PIERRE TIMBAUD\_

78180 MONTIGNY LE BRETONNEUX\_

FRANCE\_

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|  |  |
| --- | --- |
| **Customer Information Number:** | (0) 493 95 60 00\_  SDSQuestion@dow.com |

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**Emergency telephone number**\_

**24-Hour Emergency Contact:** 0033 388 736 000\_

**Local Emergency Contact:** 00 31 115 69 4982\_

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**2. HAZARDS IDENTIFICATION\_**

7/27/18; BK – INC1652373

11/3/17; BK - Lion

6/1/17; BK – Type of Substance

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**Classification of the substance or mixture**\_

Flammable liquids - Category 3 - H226\_

Acute toxicity - Category 4 - Oral - H302\_

Acute toxicity - Category 4 - Inhalation - H332\_

Skin irritation - Category 2 - H315\_

Eye irritation - Category 2 - H319\_

Aspiration toxicity - Category 1 - H304\_

Specific target organ toxicity - single exposure - Category 3 - Respiratory tract irritant. - H335\_

Specific target organ toxicity - single exposure - Category 3 - Narcotic effects. - H336\_

Short-term (acute) aquatic hazard - Category 1 - H400\_

Long-term (chronic) aquatic hazard - Category 1 - H410\_

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

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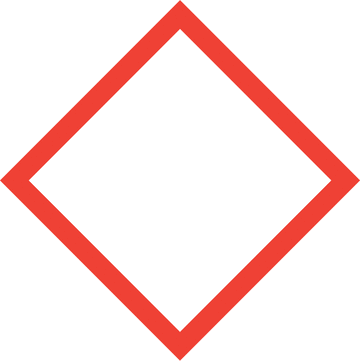
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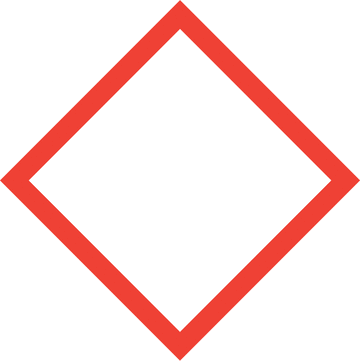
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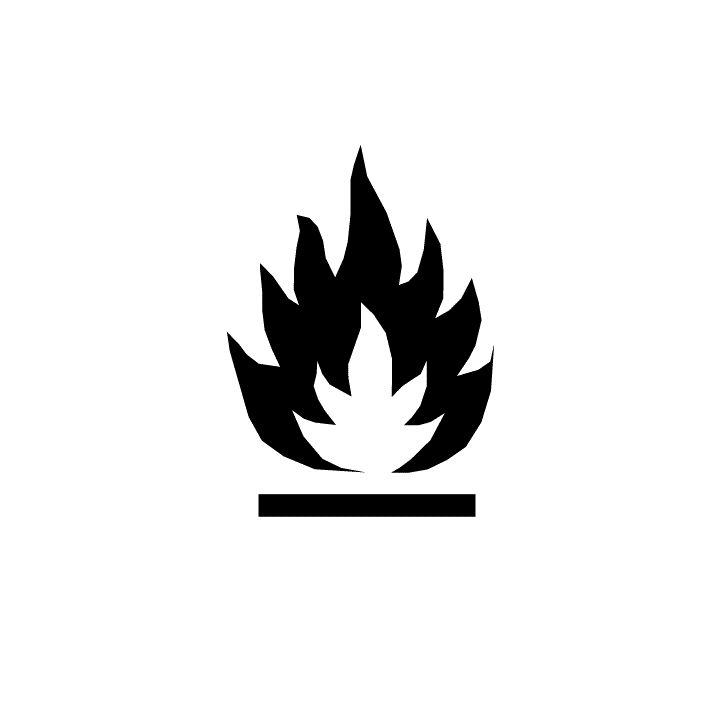
**Hazard pictograms**\_

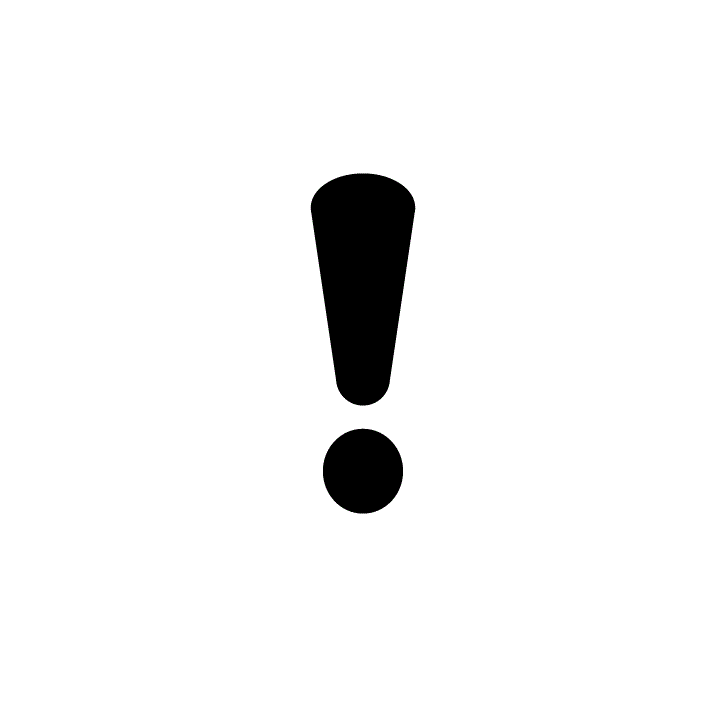
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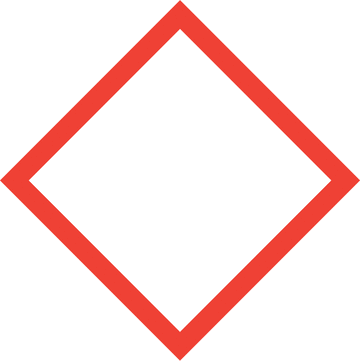
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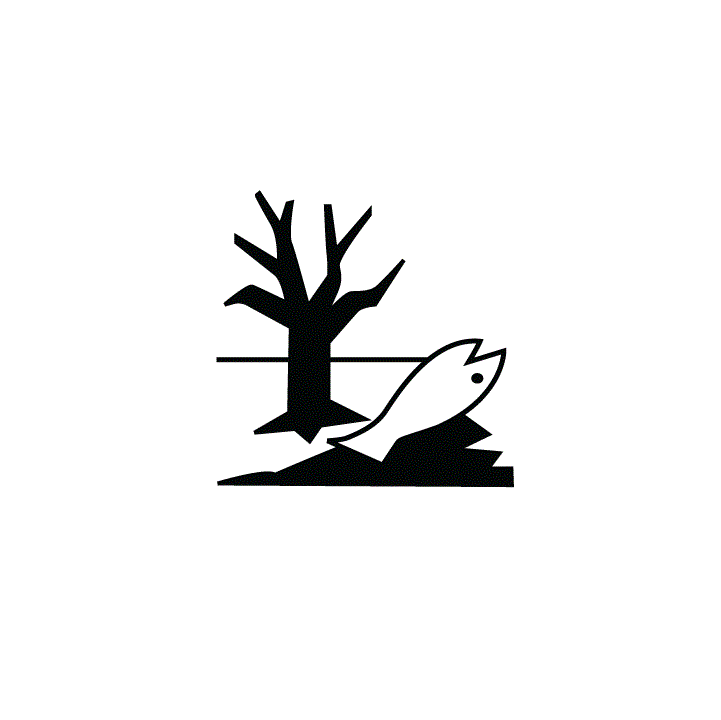


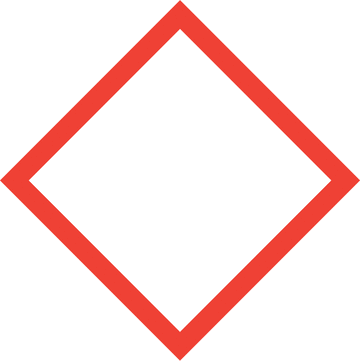


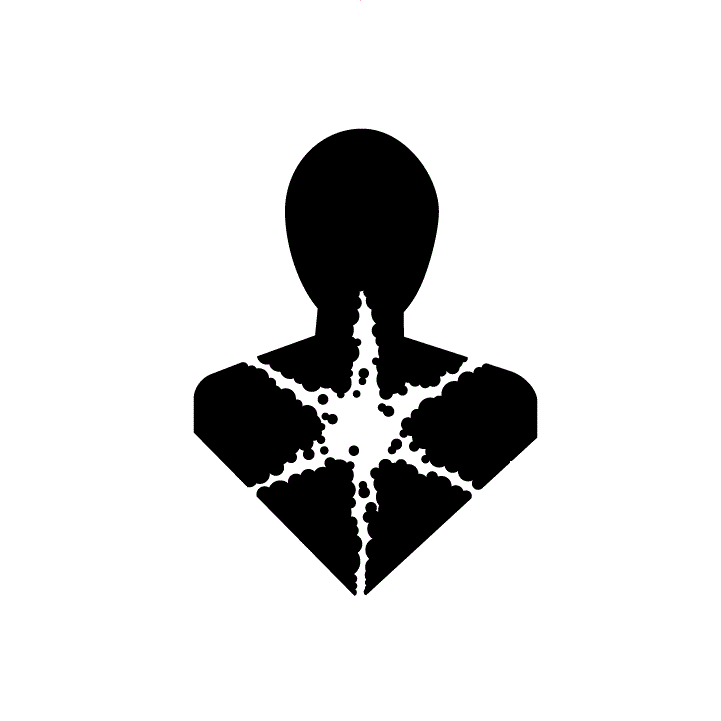












**Signal word: Danger**\_

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**Hazard statements**\_

|  |  |
| --- | --- |
| H226 | Flammable liquid and vapour. |
| H302 | Harmful if swallowed. |
| H332 | Harmful if inhaled. |
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| H304 | May be fatal if swallowed and enters airways. |
| H335 | May cause respiratory irritation. |
| H336 | May cause drowsiness or dizziness. |
| H410 | Very toxic to aquatic life with long lasting effects. |

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**Precautionary statements**\_

|  |  |
| --- | --- |
| P280 | Wear protective gloves/ protective clothing/ eye protection/ face protection. |
| P301 + P310 | IF SWALLOWED: Immediately call a POISON CENTER/doctor. |
| P302 + P352 | IF ON SKIN: Wash with plenty of soap and water. |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P331 | Do NOT induce vomiting. |
| P501 | Dispose of contents/container in accordance with applicable regulations. |

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**Supplemental information**\_

|  |  |
| --- | --- |
| EUH401 | To avoid risks to human health and the environment, comply with the instructions for use. |
|  |  |

|  |  |
| --- | --- |
| **Contains** | Chlorpyrifos;Hydrocarbons, C9, aromatics;Heavy aromatic naphtha |

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**Other hazards**\_

This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT).\_

This mixture contains no substance considered to be very persistent and very bioaccumulating (vPvB).\_

**3. COMPOSITION/INFORMATION ON INGREDIENTS\_**

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This product is a mixture.\_

|  |  |  |  |
| --- | --- | --- | --- |
| **CASRN / \_**  **EC-No. / \_**  **Index-No.** | **Concentration** | **Component** | **Classification** |

|  |  |  |  |
| --- | --- | --- | --- |
| **CASRN**\_  2921-88-2\_  **EC-No.**\_  220-864-4\_  **Index-No.**\_  015-084-00-4 | 44.53% | Chlorpyrifos | Acute Tox. - 3 - H301\_  Aquatic Acute - 1 - H400\_  Aquatic Chronic - 1 - H410\_ |

|  |  |  |  |
| --- | --- | --- | --- |
| **CASRN**\_  64742-95-6\_  **EC-No.**\_  265-199-0\_  **Index-No.**\_  649-356-00-4 | > 40.0 - < 50.0 % | Solvent naphtha (petroleum), light aromatic | Flam. Liq. - 3 - H226\_  STOT SE - 3 - H336\_  STOT SE - 3 - H335\_  Asp. Tox. - 1 - H304\_  Aquatic Chronic - 2 - H411\_ |

|  |  |  |  |
| --- | --- | --- | --- |
| **CASRN**\_  95-63-6\_  **EC-No.**\_  202-436-9\_  **Index-No.**\_  601-043-00-3 | > 10.0 - < 20.0 % | 1,2,4-Trimethylbenzene | Flam. Liq. - 3 - H226\_  Acute Tox. - 4 - H332\_  Skin Irrit. - 2 - H315\_  Eye Irrit. - 2 - H319\_  STOT SE - 3 - H335\_  Asp. Tox. - 1 - H304\_ |

|  |  |  |  |
| --- | --- | --- | --- |
| **CASRN**\_  68953-96-8\_  **EC-No.**\_  273-234-6\_  **Index-No.**\_  – | < 5.0 % | Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts | Acute Tox. - 4 - H312\_  Skin Irrit. - 2 - H315\_  Eye Dam. - 1 - H318\_  Aquatic Chronic - 2 - H411\_ |

|  |  |  |  |
| --- | --- | --- | --- |
| **CASRN**\_  98-82-8\_  **EC-No.**\_  202-704-5\_  **Index-No.**\_  601-024-00-X | < 5.0 % | Cumene | Flam. Liq. - 3 - H226\_  STOT SE - 3 - H335\_  Asp. Tox. - 1 - H304\_  Aquatic Chronic - 3 - H412\_ |

|  |  |  |  |
| --- | --- | --- | --- |
| **CASRN**\_  108-67-8\_  **EC-No.**\_  203-604-4\_  **Index-No.**\_  601-025-00-5 | < 5.0 % | 1,3,5-Trimethylbenzene | Flam. Liq. - 3 - H226\_  Skin Irrit. - 2 - H315\_  Eye Irrit. - 2 - H319\_  STOT SE - 3 - H335\_  Asp. Tox. - 1 - H304\_  Aquatic Chronic - 2 - H411\_ |

|  |  |  |  |
| --- | --- | --- | --- |
| **CASRN**\_  64742-94-5\_  **EC-No.**\_  265-198-5\_  **Index-No.**\_  649-424-00-3 | < 5.0 % | Heavy aromatic naphtha | STOT SE - 3 - H336\_  Asp. Tox. - 1 - H304\_  Aquatic Chronic - 2 - H411\_ |

|  |  |  |  |
| --- | --- | --- | --- |
| **CASRN**\_  1189173-42-9\_  Not Available\_  **EC-No.**\_  918-811-1\_  **Index-No.**\_  – | < 1.0 % | Hydrocarbons, C10, aromatics, <1% naphthalene | STOT SE - 3 - H336\_  Asp. Tox. - 1 - H304\_  Aquatic Chronic - 2 - H411\_ |

|  |  |  |  |
| --- | --- | --- | --- |
| **CASRN**\_  3689-24-5\_  **EC-No.**\_  222-995-2\_  **Index-No.**\_  015-027-00-3 | < 0.1 % | Sulfotepp (O,O,O',O'-Tetraethyldithiodiphosphate) | Acute Tox. - 1 - H300\_  Acute Tox. - 1 - H330\_  Acute Tox. - 1 - H310\_  Aquatic Acute - 1 - H400\_  Aquatic Chronic - 1 - H410\_ |

|  |  |  |  |
| --- | --- | --- | --- |
| **CASRN**\_  5598-13-0\_  **EC-No.**\_  227-011-5\_  **Index-No.**\_  015-186-00-9 | < 0.1 % | Chlorpyrifos-Methyl | Skin Sens. - 1 - H317\_  Aquatic Acute - 1 - H400\_  Aquatic Chronic - 1 - H410\_ |

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

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**4. FIRST AID MEASURES\_**

**Description of first aid measures**\_

**General advice** **:** First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment. \_

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**Inhalation:** Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice. If breathing is difficult, oxygen should be administered by qualified personnel. \_

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**Skin contact:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Suitable emergency safety shower facility should be available in work area. \_

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**Eye contact:** Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice. Suitable emergency eye wash facility should be available in work area. \_

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**Ingestion:** Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person. \_

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**Most important symptoms and effects, both acute and delayed:** \_

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.\_

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**Indication of any immediate medical attention and special treatment needed**\_

**Notes to physician**:Maintain adequate ventilation and oxygenation of the patient. Chlorpyrifos is a cholinesterase inhibitor. Treat symptomatically. In case of severe acute poisoning, use antidote immediately after establishing an open airway and respiration. Atropine, only by injection, is the preferable antidote. Oximes, such as 2-PAM/protopam, may be therapeutic if used early; however, use only in conjunction with atropine. Attempt seizure control with diazepam 5-10 mg (adults) intravenous over 2-3 minutes. Repeat every 5-10 minutes as needed. Monitorfor hypotension, respiratory depression, and need for intubation. Consider second agent if seizures persist after 30 mg. If seizures persist or recur administer phenobarbital 600-1200 mg (adults) intravenous diluted in 60 ml 0.9% saline given at 25-50 mg/minute. Evaluate for hypoxia, dysrhythmia, electrolyte disturbance, hypoglycemia (treat adults with dextrose 100 mg intravenous). If exposed, plasma and red blood cell cholinesterase tests may indicate significance of exposure (baseline data are useful). If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. The decision of whether to induce vomiting or not should be made by a physician. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment. Skin contact may aggravate preexisting dermatitis. \_

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**5. FIREFIGHTING MEASURES\_**

**Suitable extinguishing media:** Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective. \_

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**Unsuitable extinguishing media:**

No data available\_

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**Special hazards arising from the substance or mixture**\_

**Hazardous combustion products:**

During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Sulfur oxides. Phosphorous compounds. Nitrogen oxides. Hydrogen chloride. Carbon monoxide. Carbon dioxide. \_

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**Unusual Fire and Explosion Hazards:** Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. When product is stored in closed containers, a flammable atmosphere can develop. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Dense smoke is produced when product burns. \_

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**Advice for firefighters**\_

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Consider feasibility of a controlled burn to minimize environment damage. Foam fire extinguishing system is preferred because uncontrolled water can spread possible contamination. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Eliminate ignition sources. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS. \_

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**Special protective equipment for firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance. \_

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**6. ACCIDENTAL RELEASE MEASURES\_**

**Personal precautions, protective equipment and emergency procedures:** Evacuate area. Refer to section 7, Handling, for additional precautionary measures. Only trained and properly protected personnel must be involved in clean-up operations. Keep personnel out of low areas. Keep personnel out of confined or poorly ventilated areas. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. Confined space entry procedures must be followed before entering the area. Vapor explosion hazard. Keep out of sewers. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Ground and bond all containers and handling equipment. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

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**Environmental precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. Spills or discharge to natural waterways is likely to kill aquatic organisms. \_

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**Methods and materials for containment and cleaning up:** Pump with explosion-proof equipment. If available, use foam to smother or suppress. Contain spilled material if possible. Small spills: Absorb with materials such as: Clay. Dirt. Sand. Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Dow AgroSciences for clean-up assistance. See Section 13, Disposal Considerations, for additional information. \_

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**7. Handling and storage\_**

**Precautions for safe handling:** Keep out of reach of children. Keep away from heat, sparks and flame. Do not swallow. Do not breathe vapour. Do not breathe mist. Do not get in eyes, on skin, on clothing. Avoid prolonged contact with eyes, skin and clothing. Wash thoroughly after handling. Keep container tightly closed. Use only with adequate ventilation. No smoking, open flames or sources of ignition in handling and storage area. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Do not enter confined spaces unless adequately ventilated. Electrically ground and bond all equipment. Do not cut or weld container. Product shipped/handled hot can cause thermal burns. Avoid contact with vapor from head space of containers. Cautiously vent pressure prior to opening container. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION. \_

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**Conditions for safe storage:** Minimize sources of ignition, such as static build-up, heat, spark or flame. Avoid temperatures above 50°C (122°F) Store in a dry place. Store in original container. Keep container tightly closed when not in use. Do not store near food, foodstuffs, drugs or potable water supplies. \_

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**8. EXPOSURE CONTROLS/PERSONAL PROTECTION\_**

**Control parameters**\_

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.\_

|  |  |  |  |
| --- | --- | --- | --- |
| **Component** | **Regulation** | **Type of listing** | **Value/Notation** |

|  |  |  |  |
| --- | --- | --- | --- |
| Chlorpyrifos | ACGIH | TWA Inhalable fraction and vapor | 0.1 mg/m3 |
|  | ACGIH | TWA | SKIN, BEI |

|  |  |  |  |
| --- | --- | --- | --- |
| Solvent naphtha (petroleum), light aromatic | ACGIH | TWA | 200 mg/m3 , total hydrocarbon vapor |
|  | Dow IHG | TWA | 100 mg/m3 |
|  | Dow IHG | STEL | 300 mg/m3 |

|  |  |  |  |
| --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | ACGIH | TWA | 25 ppm |
|  | 2000/39/EC | TWA | 100 mg/m3 20 ppm |

|  |  |  |  |
| --- | --- | --- | --- |
| Cumene | ACGIH | TWA | 50 ppm |
|  | 2000/39/EC | TWA | 100 mg/m3 20 ppm |
|  | 2000/39/EC | TWA | SKIN |
|  | 2000/39/EC | STEL | 250 mg/m3 50 ppm |
|  | 2000/39/EC | STEL | SKIN |

|  |  |  |  |
| --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | ACGIH | TWA | 25 ppm |
|  | 2000/39/EC | TWA | 100 mg/m3 20 ppm |

|  |  |  |  |
| --- | --- | --- | --- |
| Heavy aromatic naphtha | ACGIH | TWA | 200 mg/m3 , total hydrocarbon vapor |
|  | Dow IHG | TWA | 100 mg/m3 |
|  | Dow IHG | STEL | 300 mg/m3 |

|  |  |  |  |
| --- | --- | --- | --- |
| Sulfotepp (O,O,O',O'-Tetraethyldithiodiphosphate) | ACGIH | TWA Inhalable fraction and vapor | 0.1 mg/m3 |
|  | ACGIH | TWA | SKIN, BEI |
|  | 2000/39/EC | TWA | 0.1 mg/m3 |
|  | 2000/39/EC | TWA | SKIN |

|  |  |  |  |
| --- | --- | --- | --- |
| Chlorpyrifos-Methyl | Dow IHG | TWA | 0.1 mg/m3 |
|  | Dow IHG | TWA | SKIN |

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RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING. \_

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Biological occupational exposure limits

| **Components** | **CAS-No.** | **Control parameters** | **Biological specimen** | **Sampling time** | **Permissible concentration** | **Basis** |
| --- | --- | --- | --- | --- | --- | --- |

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|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Chlorpyrifos | 2921-88-2 | cholinesterase (red blood cells) | Blood |  | 80 % of an individual's baseline | IL BEI |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | cholinesterase (red blood cells) | Blood |  | 70 % of an individual's baseline | IL BEI |

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**Exposure controls**\_

**Engineering controls:** Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations. \_

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**Individual protection measures**\_

**Eye/face protection:** Use chemical goggles. Chemical goggles should be consistent with EN 166 or equivalent. \_

**Skin protection**\_

**Hand protection:** Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Chlorinated polyethylene. Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. When prolonged or frequently repeated contact may occur, a glove with a protection class of 4 or higher (breakthrough time greater than 120 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 1 or higher (breakthrough time greater than 10 minutes according to EN 374) is recommended. Glove thickness alone is not a good indicator of the level of protection a glove provides against a chemical substance as this level of protection is also highly dependent on the specific composition of the material that the glove is fabricated from. The thickness of the glove must, depending on model and type of material, generally be more than 0.35 mm to offer sufficient protection for prolonged and frequent contact with the substance. As an exception to this general rule it is known that multilayer laminate gloves may offer prolonged protection at thicknesses less than 0.35 mm. Other glove materials with a thickness of less than 0.35 mm may offer sufficient protection when only brief contact is expected. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier. \_

**Other protection:** Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task. \_

**Respiratory protection:** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use an approved respirator. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus. \_

Use the following CE approved air-purifying respirator: Organic vapor cartridge with a particulate pre-filter, type AP2 (meeting standard EN 14387). \_

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**See SECTION 7: Handling and storage and SECTION 13: Disposal considerations for measures to prevent excessive environmental exposure during use and waste disposal.**\_

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**9. PHYSICAL AND CHEMICAL PROPERTIES\_**

**Appearance**

|  |  |
| --- | --- |
| **Physical state** | Liquid. |

|  |  |
| --- | --- |
| **Color** | Yellow |

|  |  |
| --- | --- |
| **Odor** | Solvent |

|  |  |
| --- | --- |
| **Odor Threshold** | No test data available |

|  |  |
| --- | --- |
| **pH** | 4.56 1% (1% aqueous suspension) |
| **Melting point/range** | Not applicable |
| **Freezing point** | No test data available |

|  |  |
| --- | --- |
| **Boiling point (760 mmHg)** | No test data available |

|  |  |
| --- | --- |
| [**Flash point**] | **closed cup** 57.0 °C *Closed Cup* |

|  |  |
| --- | --- |
| **Evaporation Rate (Butyl Acetate = 1)** | No test data available |

|  |  |
| --- | --- |
| **Flammability (solid, gas)** | Not Applicable |

|  |  |
| --- | --- |
| **Lower explosion limit** | No test data available |

|  |  |
| --- | --- |
| **Upper explosion limit** | No test data available |

|  |  |
| --- | --- |
| **Vapor Pressure** | No test data available |

|  |  |
| --- | --- |
| **Relative Vapor Density (air = 1)** | No test data available |

|  |  |
| --- | --- |
| **Relative Density (water = 1)** | No test data available |
| **Water solubility** | emulsifiable | |

|  |  |
| --- | --- |
| **Partition coefficient: n-octanol/water** | No data available |

|  |  |
| --- | --- |
| **Auto-ignition temperature** | *92/69/EEC A15* none below 400 degC |

|  |  |
| --- | --- |
| **Decomposition temperature** | No test data available |

Optional if Value or Remarks then:

|  |  |
| --- | --- |
| **Dynamic Viscosity** | 4.17 mPa.s at 20 °C |
| **Kinematic Viscosity** | 3.23 mm2/s at 20 °C |

If Explosive Acc. EU legislation or Explosive Acc. Transp. Regul.or Method then:

|  |  |
| --- | --- |
| **Explosive properties** | Not explosive |

|  |  |
| --- | --- |
| **Oxidizing properties** | No |
| **Liquid Density** | 1.0759 g/mL at 20 °C *Digital density meter* |

|  |  |
| --- | --- |
| **Molecular weight** | No data available |

Optional if Value or Remarks then:

|  |  |
| --- | --- |
| **Surface tension** | 31 mN/m at25 °C *EC Method A5* |

\_

NOTE: The physical data presented above are typical values and should not be construed as a specification.\_

**10. STABILITY AND REACTIVITY\_**

**Reactivity:**

No dangerous reaction known under conditions of normal use. \_

\_

**Chemical stability:**

Unstable at elevated temperatures. \_

\_

**Possibility of hazardous reactions:**

Polymerization will not occur. \_

\_

**Conditions to avoid:**

Avoid temperatures above 50°C (122°F) Active ingredient decomposes at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems. \_

\_

**Incompatible materials:**

Avoid contact with oxidizing materials. Avoid contact with: Bases. Strong acids. \_

\_

**Hazardous decomposition products:**

Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Carbon monoxide. Carbon dioxide. Hydrogen chloride. Nitrogen oxides. Phosphorus oxides. Sulfur oxides. Toxic gases are released during decomposition.

\_

**11. TOXICOLOGICAL INFORMATION\_**

11/3/17; BK - Lion

7/11/17; BK - TS

\_

*Toxicological information appears in this section when such data is available.* \_

\_

**Acute toxicity**\_

**Acute oral toxicity**\_

Moderate toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. May cause central nervous system effects. \_

\_

As product: \_

LD50. Rat. female. > 300 - 500 mg/kg \_

\_

**Acute dermal toxicity**\_

Prolonged skin contact is unlikely to result in absorption of harmful amounts. \_

\_

As product: \_

LD50. Rabbit. male.

4,768 mg/kg \_

As product: \_

LD50. Rabbit. female.

> 5,000 mg/kg \_

\_

**Acute inhalation toxicity**\_

Prolonged excessive exposure to mist may cause serious adverse effects, even death. May cause central nervous system effects. Mist may cause irritation of upper respiratory tract (nose and throat). \_

\_

As product: \_

LC50. Rat. female. 4 Hour. dust/mist. 2.86 mg/l \_

\_

\_

**Skin corrosion/irritation**\_

Brief contact may cause slight skin irritation with local redness.\_

May cause drying and flaking of the skin.\_

Effects may be slow to heal.\_

\_

**Serious eye damage/eye irritation**\_

May cause moderate eye irritation.\_

May cause slight corneal injury.\_

\_

**Sensitization**\_

Did not cause allergic skin reactions when tested in guinea pigs.\_

\_

For respiratory sensitization:\_

No relevant data found.\_

\_

**Specific Target Organ Systemic Toxicity (Single Exposure)**\_

May cause respiratory irritation.\_

\_

May cause drowsiness or dizziness.\_

\_

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**\_

For the active ingredient(s):\_

Excessive exposure may produce organophosphate type cholinesterase inhibition.\_

Signs and symptoms of excessive exposure to active ingredient may be headache, dizziness, incoordination, muscle twitching, tremors, nausea, abdominal cramps, diarrhea, sweating, pinpoint pupils, blurred vision, salivation, tearing, tightness in chest, excessive urination, convulsions.\_

In animals, effects have been reported on the following organs:\_

Adrenal gland.\_

Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.\_

\_

For the major component(s):\_

In animals, effects have been reported on the following organs:\_

Blood.\_

Kidney.\_

Liver.\_

Respiratory tract.\_

Cataracts were observed in rats exposed to cumene vapors.\_

\_

**Carcinogenicity**\_

For the minor component(s): Has caused cancer in laboratory animals. However, the relevance of this to humans is unknown. \_

\_

For the active ingredient(s): Did not cause cancer in laboratory animals. \_

\_

**Teratogenicity**

\_

For the active ingredient(s): Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals. \_

\_

For the major component(s): Has caused birth defects in laboratory animals only at doses producing severe toxicity in the mother. Has been toxic to the fetus in laboratory animals at doses toxic to the mother. \_

\_

**Reproductive toxicity**

\_

For the active ingredient(s): Chlorpyrifos did not interfere with fertility in reproduction studies in laboratory animals. Some evidence of toxicity to the offspring occurred, but only at a dose high enough to produce significant toxicity to the parent animals. \_

\_

For the major component(s): In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals. \_

\_

**Mutagenicity**\_

For the active ingredient(s): Based on a majority of negative data and some equivocal or marginally positive results, active ingredient is considered to have minimal genetic toxicity potential. \_

\_

For the major component(s): In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative. \_

\_

**Aspiration Hazard**\_

May be fatal if swallowed and enters airways. \_

\_

**12. ECOLOGICAL INFORMATION\_**

\_

*Ecotoxicological information appears in this section when such data is available.*\_

\_

**Toxicity**\_

**Acute toxicity to fish**\_

Material is very toxic to aquatic organisms (LC50/EC50/IC50 below 1 mg/L in the most sensitive species).\_

\_

LC50. Oncorhynchus mykiss (rainbow trout). flow-through test. 96 Hour. 0.15 mg/l\_

\_

**Acute toxicity to aquatic invertebrates**\_

EC50. Daphnia magna (Water flea). static test. 48 Hour. 0.000032 mg/l\_

\_

**Acute toxicity to algae/aquatic plants**

\_

ErC50. Pseudokirchneriella subcapitata (green algae). 72 Hour. Growth rate inhibition. 4.7 mg/l\_

\_

**Toxicity to Above Ground Organisms**\_

oral LD50. Apis mellifera (bees). 48 Hour. mortality. 0.33micrograms/bee\_

\_

contact LD50. Apis mellifera (bees). 48 Hour. mortality. 0.22micrograms/bee\_

\_

**Toxicity to soil-dwelling organisms**\_

LC50. Eisenia fetida (earthworms). 14 d. mortality. 313 mg/kg\_

\_

**Persistence and degradability**\_

\_

**Chlorpyrifos**\_

**Biodegradability:**

Material is not readily biodegradable according to OECD/EEC guidelines. \_

10-day Window: Fail \_

**Biodegradation:**  22 % \_

**Exposure time:** 28 d \_

**Method:** OECD Test Guideline 301D or Equivalent \_

\_

**Theoretical Oxygen Demand:**

2.46 mg/mg \_

\_

**Stability in Water (1/2-life)**\_

Hydrolysis. half-life. 72 d\_

\_

**Photodegradation**\_

**Test Type:**

Half-life (indirect photolysis)\_

**Sensitization:**

OH radicals\_

**Atmospheric half-life:**

1.4 Hour\_

**Method:**

Estimated.\_

\_

**Solvent naphtha (petroleum), light aromatic**\_

**Biodegradability:**

For the major component(s): Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability. For some component(s): Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions. \_

\_

**1,2,4-Trimethylbenzene**\_

**Biodegradability:**

Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability). \_

\_

**Biodegradation:**  100 % \_

**Exposure time:** 1 d \_

\_

**Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts**\_

**Biodegradability:**

Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability. \_

10-day Window: Fail \_

**Biodegradation:**  2.9 % \_

**Exposure time:** 28 d \_

**Method:** OECD Test Guideline 301E or Equivalent \_

\_

**Cumene**\_

**Biodegradability:**

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. \_

10-day Window: Pass \_

**Biodegradation:**  70 % \_

**Exposure time:** 20 d \_

**Method:** OECD Test Guideline 301D or Equivalent \_

\_

**Photodegradation**\_

**Test Type:**

Half-life (indirect photolysis)\_

**Sensitization:**

OH radicals\_

**Atmospheric half-life:**

1.55 d\_

**Method:**

Estimated.\_

\_

**1,3,5-Trimethylbenzene**\_

**Biodegradability:**

Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions. \_

10-day Window: Not applicable \_

**Biodegradation:**  0 % \_

**Exposure time:** 28 d \_

**Method:** OECD Test Guideline 301C or Equivalent \_

10-day Window: Not applicable \_

**Biodegradation:**  50 % \_

**Exposure time:** 4.4 d \_

**Method:** Calculated. \_

\_

**Heavy aromatic naphtha**\_

**Biodegradability:**

Material is inherently biodegradable (reaches > 20% biodegradation in OECD test(s) for inherent biodegradability). \_

\_

**Hydrocarbons, C10, aromatics, <1% naphthalene**\_

**Biodegradability:**

Material is inherently biodegradable (reaches > 20% biodegradation in OECD test(s) for inherent biodegradability). \_

\_

**Sulfotepp (O,O,O',O'-Tetraethyldithiodiphosphate)**\_

**Biodegradability:**

No relevant data found. \_

\_

**Chlorpyrifos-Methyl**\_

**Biodegradability:**

Biodegradation under aerobic laboratory conditions is below detectable limits (BOD20 or BOD28/ThOD < 2.5%). Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions. \_

10-day Window: Fail \_

**Biodegradation:**  25 % \_

**Exposure time:** 28 d \_

**Method:** OECD Test Guideline 301D or Equivalent \_

\_

**Theoretical Oxygen Demand:**

2.08 mg/mg \_

\_

**Stability in Water (1/2-life)**\_

. 2.2 - 3.6 d\_

\_

**Photodegradation**\_

**Atmospheric half-life:**

2.11 Hour\_

**Method:**

Estimated.\_

\_

**Bioaccumulative potential**\_

\_

**Chlorpyrifos** \_

**Bioaccumulation:**

Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5). \_

**Partition coefficient: n-octanol/water(log Pow):** 4.7 at 20 °C Estimated. \_

\_

**Solvent naphtha (petroleum), light aromatic** \_

**Bioaccumulation:**

For the major component(s): Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5). For the minor component(s): Bioconcentration potential is low (BCF < 100 or Log Pow < 3). \_

\_

**1,2,4-Trimethylbenzene** \_

**Bioaccumulation:**

Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5). \_

**Partition coefficient: n-octanol/water(log Pow):** 3.63 Measured \_

**Bioconcentration factor (BCF):** 33 - 275 Cyprinus carpio (Carp) 56 d Measured\_

\_

**Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts** \_

**Bioaccumulation:**

Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5). \_

**Partition coefficient: n-octanol/water(log Pow):** 4.6 OECD Test Guideline 107 or Equivalent \_

\_

**Cumene** \_

**Bioaccumulation:**

Bioconcentration potential is low (BCF < 100 or Log Pow < 3). \_

**Partition coefficient: n-octanol/water(log Pow):** 3.4 - 3.7 Measured \_

**Bioconcentration factor (BCF):** 35.5 Fish Measured\_

\_

**1,3,5-Trimethylbenzene** \_

**Bioaccumulation:**

Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5). \_

**Partition coefficient: n-octanol/water(log Pow):** 3.42 Measured \_

**Bioconcentration factor (BCF):** 161 Pimephales promelas (fathead minnow) Measured\_

\_

**Heavy aromatic naphtha** \_

**Bioaccumulation:**

For similar material(s): Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7). \_

\_

**Hydrocarbons, C10, aromatics, <1% naphthalene** \_

**Bioaccumulation:**

No data available for this product. For similar material(s): Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7). \_

\_

**Sulfotepp (O,O,O',O'-Tetraethyldithiodiphosphate)** \_

**Bioaccumulation:**

Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5). \_

**Partition coefficient: n-octanol/water(log Pow):** 3.99 \_

\_

**Chlorpyrifos-Methyl** \_

**Bioaccumulation:**

Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5). \_

**Partition coefficient: n-octanol/water(log Pow):** 4 \_

**Bioconcentration factor (BCF):** 1,800 Oncorhynchus mykiss (rainbow trout) 13 d \_

\_

**Mobility in soil**\_

\_

**Chlorpyrifos** \_

Expected to be relatively immobile in soil (Koc > 5000).\_

**Partition coefficient** **(Koc):** 8151 \_

\_

**Solvent naphtha (petroleum), light aromatic** \_

For the major component(s):\_

Potential for mobility in soil is low (Koc between 500 and 2000).\_

\_

**1,2,4-Trimethylbenzene** \_

Potential for mobility in soil is low (Koc between 500 and 2000).\_

**Partition coefficient** **(Koc):** 720 Estimated.\_

\_

**Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts** \_

No relevant data found.\_

\_

**Cumene** \_

Potential for mobility in soil is low (Koc between 500 and 2000).\_

**Partition coefficient** **(Koc):** 800 - 2800 Estimated.\_

\_

**1,3,5-Trimethylbenzene** \_

Potential for mobility in soil is low (Koc between 500 and 2000).\_

**Partition coefficient** **(Koc):** 741.65 Estimated.\_

\_

**Heavy aromatic naphtha** \_

No relevant data found.\_

\_

**Hydrocarbons, C10, aromatics, <1% naphthalene** \_

No relevant data found.\_

\_

**Sulfotepp (O,O,O',O'-Tetraethyldithiodiphosphate)** \_

Potential for mobility in soil is slight (Koc between 2000 and 5000).\_

\_

**Chlorpyrifos-Methyl** \_

Potential for mobility in soil is low (Koc between 500 and 2000).\_

**Partition coefficient** **(Koc):** 1189 - 8100 \_

\_

**Results of PBT and vPvB assessment** \_

\_

**Chlorpyrifos** \_

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB). \_

\_

**Solvent naphtha (petroleum), light aromatic** \_

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB). \_

\_

**1,2,4-Trimethylbenzene** \_

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB). \_

\_

**Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts** \_

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB). \_

\_

**Cumene** \_

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT). \_

\_

**1,3,5-Trimethylbenzene** \_

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB). \_

\_

**Heavy aromatic naphtha** \_

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB). \_

\_

**Hydrocarbons, C10, aromatics, <1% naphthalene** \_

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB). \_

\_

**Sulfotepp (O,O,O',O'-Tetraethyldithiodiphosphate)** \_

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT). \_

\_

**Chlorpyrifos-Methyl** \_

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB). \_

\_

**Other adverse effects**\_

\_

**Chlorpyrifos**\_

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.\_

\_

**Solvent naphtha (petroleum), light aromatic**\_

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.\_

\_

**1,2,4-Trimethylbenzene**\_

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.\_

\_

**Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts**\_

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.\_

\_

**Cumene**\_

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.\_

\_

**1,3,5-Trimethylbenzene**\_

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.\_

\_

**Heavy aromatic naphtha**\_

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.\_

\_

**Hydrocarbons, C10, aromatics, <1% naphthalene**\_

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.\_

\_

**Sulfotepp (O,O,O',O'-Tetraethyldithiodiphosphate)**\_

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.\_

\_

**Chlorpyrifos-Methyl**\_

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.\_

\_

**13. DISPOSAL CONSIDERATIONS\_**

**Disposal methods:** \_

If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws. \_

\_

**14. TRANSPORT INFORMATION\_**

**\_**

**Classification for ROAD and Rail transport:\_**

|  |  |
| --- | --- |
| **Proper shipping name** | ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, FLAMMABLE(Chlorpyrifos, Aromatic hydrocarbon) |
| **UN number** | UN 3017 |
| **Class** | 6.1 (3) |
| **Packing group** | III |
| **Environmental hazards** | Chlorpyrifos |

**\_**

**\_**

**Classification for SEA transport (IMO-IMDG):\_**

|  |  |
| --- | --- |
| **Proper shipping name** | ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, FLAMMABLE(Chlorpyrifos, Aromatic hydrocarbon) |
| **UN number** | UN 3017 |
| **Class** | 6.1 (3) |
| **Packing group** | III |
| **Marine pollutant** | Chlorpyrifos |
| **Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code** | Consult IMO regulations before transporting ocean bulk |

**\_**

**Classification for AIR transport (IATA/ICAO):\_**

|  |  |
| --- | --- |
| **Proper shipping name** | Organophosphorus pesticide, liquid, toxic, flammable(Chlorpyrifos, Aromatic hydrocarbon) |
| **UN number** | UN 3017 |
| **Class** | 6.1 (3) |
| **Packing group** | III |

\_

\_

\_

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.\_

\_

**15. REGULATORY INFORMATION\_**

\_

**Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.**\_

Listed in Regulation: FLAMMABLE LIQUIDS\_

Number in Regulation: P5c\_

5,000 t\_

50,000 t\_

Listed in Regulation: ENVIRONMENTAL HAZARDS\_

Number in Regulation: E1\_

100 t\_

200 t\_

Listed in Regulation: Petroleum products: (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams),(d) heavy fuel oils (e) alternative fuels serving the same purposes and with similar properties as regards flammability and environmental hazards as the products referred to in points (a) to (d)\_

Number in Regulation: 34\_

2,500 t\_

25,000 t\_

\_

Classification and labeling have been performed according to Regulation (EC) No 1272/2008.\_

**16. OTHER INFORMATION\_**

**\_**

**Full text of H-Statements referred to under sections 2 and 3.**\_

|  |  |
| --- | --- |
| H226 | Flammable liquid and vapour. |
| H300 | Fatal if swallowed. |
| H301 | Toxic if swallowed. |
| H302 | Harmful if swallowed. |
| H304 | May be fatal if swallowed and enters airways. |
| H310 | Fatal in contact with skin. |
| H312 | Harmful in contact with skin. |
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H318 | Causes serious eye damage. |
| H319 | Causes serious eye irritation. |
| H330 | Fatal if inhaled. |
| H332 | Harmful if inhaled. |
| H335 | May cause respiratory irritation. |
| H336 | May cause drowsiness or dizziness. |
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |
| H411 | Toxic to aquatic life with long lasting effects. |
| H412 | Harmful to aquatic life with long lasting effects. |

**\_**

**Revision\_**

Identification Number:260746 / A285 / Issue Date: 05/29/2019 / Version: 3.0\_

DAS Code: EF-1551\_

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.\_

**\_**

**Legend\_**

|  |  |
| --- | --- |
| 2000/39/EC | Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values |
| ACGIH | USA. ACGIH Threshold Limit Values (TLV) |
| Dow IHG | Dow Industrial Hygiene Guideline |
| IL BEI | Israel. Safety at Work Regulations - Annex III Biological Exposure Indices |
| SKIN | Absorbed via skin |
| SKIN, BEI | Absorbed via Skin, Biological Exposure Indice |
| STEL | Short term exposure limit |
| TWA | Limit Value - eight hours |

|  |  |
| --- | --- |
| Acute Tox. | Acute toxicity |
| Aquatic Acute | Short-term (acute) aquatic hazard |
| Aquatic Chronic | Long-term (chronic) aquatic hazard |
| Asp. Tox. | Aspiration hazard |
| Eye Dam. | Serious eye damage |
| Eye Irrit. | Eye irritation |
| Flam. Liq. | Flammable liquids |
| Skin Irrit. | Skin irritation |
| Skin Sens. | Skin sensitisation |
| STOT SE | Specific target organ toxicity - single exposure |

\_

**Full text of other abbreviations**\_

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative\_

\_

**Information Source and References**\_

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company. \_

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DOW AGROSCIENCES S.A.S. urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version. \_

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