DOW AGROSCIENCES LIMITED encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifiers
Product name: DURSBAN™ 4 Insecticide

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses: Plant Protection Product

1.3 Details of the supplier of the safety data sheet
COMPANY IDENTIFICATION
DOW AGROSCIENCES LIMITED
LATCHMORE COURT
BRAND STREET
HITCHIN
England
SG5 1NH
UNITED KINGDOM

Customer Information Number: SDSQuestion@dow.com

1.4 EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: 0031 115 694 982
Local Emergency Contact: 00 31 115 69 4982

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EU) 1272/2008:
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  
Acute aquatic toxicity - Category 1 - H400  
Chronic aquatic toxicity - Category 1 - H410  
For the full text of the H-Statements mentioned in this Section, see Section 16.

Classification according to EU Directives 67/548/EEC or 1999/45/EC:
R10  
Harmful - R20/22  
Harmful - R65  
Irritant - R36/37/38  
Dangerous for the environment - R50/53  
For the full text of the R-phrases mentioned in this Section, see Section 16.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 [CLP/GHS]:

Hazard pictograms

Signal word: DANGER

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.

Supplemental Hazard Statements
EUH401 To avoid risks to human health and the environment, comply with the instructions for use.

Precautionary statements
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
P305 + P351 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, + P338 if present and easy to do. Continue rinsing.  
P331 Do NOT induce vomiting.  
P501 Dispose of contents/container to a licensed waste disposal contractor or collection site except for empty clean triple rinsed containers which can be disposed of as non-hazardous waste.
## 3.2 Mixture

This product is a mixture.

<table>
<thead>
<tr>
<th>CASRN / EC-No. / Index-No.</th>
<th>REACH Registration Number</th>
<th>Concentration</th>
<th>Component</th>
<th>Classification: REGULATION (EC) No 1272/2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>CASRN 2921-88-2 EC-No. 220-864-4 Index-No. 015-084-00-4</td>
<td>44.5%</td>
<td>chlorpyrifos (ISO)</td>
<td>Acute Tox. - 3 - H301 Aquatic Acute - 1 - H400 Aquatic Chronic - 1 - H410</td>
<td></td>
</tr>
<tr>
<td>CASRN Not available EC-No. 918-668-5 Index-No. –</td>
<td>01-2119455851-35</td>
<td>&gt; 40.0 - &lt; 50.0 %</td>
<td>Hydrocarbons, C9, aromatics</td>
<td>Flam. Liq. - 3 - H226 STOT SE - 3 - H336 STOT SE - 3 - H335 Asp. Tox. - 1 - H304 Aquatic Chronic - 2 - H411</td>
</tr>
<tr>
<td>CASRN 26264-06-2 EC-No. 247-557-8 Index-No. –</td>
<td>&lt; 5.0 %</td>
<td>Benzenesulfonic acid, dodecyl-, calcium salt</td>
<td>Acute Tox. - 4 - H302 Skin Irrit. - 2 - H315 Eye Dam. - 1 - H318</td>
<td></td>
</tr>
<tr>
<td>CASRN Not Available EC-No. – Index-No. –</td>
<td>01-2119463583-34</td>
<td>&lt; 5.0 %</td>
<td>Hydrocarbons, C10, aromatics, &lt;1% naphthalene</td>
<td>STOT SE - 3 - H336 Asp. Tox. - 1 - H304 Aquatic Chronic - 2 - H411</td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16.
SECTION 4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice: 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.

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.

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.

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.

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.

4.2 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.
4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician: Skin contact may aggravate preexisting dermatitis. 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. Monitor for 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.

SECTION 5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. General purpose synthetic foams (including AFFF type) or protein foams are preferred if available. Alcohol resistant foams (ATC type) may function.

Unsuitable extinguishing media: no data available

5.2 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. Phosphorus oxides. Nitrogen oxides. Hydrogen chloride. Carbon monoxide. Carbon dioxide.

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. Electrically ground and bond all equipment. Flammable mixtures of this product are readily ignited even by static discharge. 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.

5.3 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. 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.

**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). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

**6.1 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 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.

**6.2 Environmental precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

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

**6.4 Reference to other sections:** References to other sections, if applicable, have been provided in the previous sub-sections.

### SECTION 7. HANDLING AND STORAGE

**7.1 Precautions for safe handling:** Keep out of reach of children. Keep away from heat, sparks and flame. No smoking, open flames or sources of ignition in handling and storage area. Electrically ground and bond all equipment. 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. Do not get in eyes, on skin, on clothing. Avoid prolonged contact with eyes, skin and clothing. Wash thoroughly after handling. Do not swallow. Do not breathe vapour. Do not breathe dust or mist. Use only with adequate ventilation. Do not cut or weld container. Store in tightly closed container. Product shipped/handled hot can cause thermal burns. Do not enter confined spaces unless adequately ventilated. Avoid contact with vapor from head space of containers. Cautiously vent pressure prior to opening container. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.
7.2 Conditions for safe storage, including any incompatibilities: 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. Minimize sources of ignition, such as static build-up, heat, spark or flame. Avoid temperatures above 50°C (122°F)

7.3 Specific end use(s): Refer to product label.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters
Exposure limits are listed below, if they exist.

<table>
<thead>
<tr>
<th>Component</th>
<th>Regulation</th>
<th>Type of listing</th>
<th>Value/Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>chlorpyrifos (ISO)</td>
<td>ACGIH</td>
<td>TWA Inhalable fraction and vapor</td>
<td>0.1 mg/m3</td>
</tr>
<tr>
<td></td>
<td>ACGIH</td>
<td>TWA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IE OEL</td>
<td>OELV - 8 hrs (TWA)</td>
<td></td>
</tr>
</tbody>
</table>

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.

8.2 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.

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. 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. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply.
Use the following CE approved air-purifying respirator: Organic vapor cartridge with a particulate pre-filter, type AP2.

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

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties
Appearance
- Physical state: Liquid.
- Color: Yellow
- Odor: Solvent
- Odor Threshold: No test data available
- pH: 7.0, 1% CIPAC MT 75.2 (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 53.5 °C 92/69/EEC A9
- 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
- Dynamic Viscosity: 2.22 mPa.s at 40 °C
- Kinematic Viscosity: 2.09 mm2/s at 40 °C
- Explosive properties: No EEC A14
- Oxidizing properties: No

9.2 Other information
- Liquid Density: 1.07 g/cm3 at 25 °C Pyknometer
- Molecular weight: no data available
- Surface tension: 31 mN/m at 25 °C EC Method A5
NOTE: The physical data presented above are typical values and should not be construed as a specification.

**SECTION 10. STABILITY AND REACTIVITY**

10.1 Reactivity: no data available

10.2 Chemical stability: Thermally stable at typical use temperatures.

10.3 Possibility of hazardous reactions: Polymerization will not occur.

10.4 Conditions to avoid: Avoid temperatures above 50 °C
Generation of gas during decomposition can cause pressure in closed systems. Avoid static discharge.


10.6 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.

**SECTION 11. TOXICOLOGICAL INFORMATION**

Toxicological information on this product or its components appear in this section when such data is available.

11.1 Information on toxicological effects

**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 may cause serious adverse effects, even death. May cause central nervous system effects.
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.

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.

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 lab 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
Aspiration into the lungs may occur during ingestion or vomiting, causing lung damage or even death due to chemical pneumonia.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicological information on this product or its components appear in this section when such data is available.

12.1 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

12.2 Persistence and degradability

chlorpyrifos (ISO)
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

Hydrocarbons, C9, aromatics
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.

Benzenesulfonic acid, dodecyl-, calcium salt
Biodegradability: For similar material(s): Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
10-day Window: Pass
Biodegradation: 95 %
Exposure time: 28 d
Method: OECD Test Guideline 301E or Equivalent

Hydrocarbons, C10, aromatics, <1% naphthalene
Biodegradability: Material is inherently biodegradable (reaches > 20% biodegradation in OECD test(s) for inherent biodegradability).

12.3 Bioaccumulative potential

chlorpyrifos (ISO)
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.

Hydrocarbons, C9, aromatics
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).

Benzenesulfonic acid, dodecyl-, calcium salt
Bioaccumulation: Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).
Partition coefficient: n-octanol/water (log Pow): 6.78 estimated

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).

12.4 Mobility in soil

chlorpyrifos (ISO)
Expected to be relatively immobile in soil (Koc > 5000).
Partition coefficient (Koc): 8151
Hydrocarbons, C9, aromatics
No relevant data found.

Benzenesulfonic acid, dodecyl-, calcium salt
No relevant data found.

Hydrocarbons, C10, aromatics, <1% naphthalene
No relevant data found.

12.5 Results of PBT and vPvB assessment

chlorpyrifos (ISO)
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, C9, aromatics
This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Benzenesulfonic acid, dodecyl-, calcium salt
This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Hydrocarbons, C10, aromatics, <1% naphthalene
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

12.6 Other adverse effects

chlorpyrifos (ISO)
This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

Hydrocarbons, C9, aromatics
This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

Benzenesulfonic acid, dodecyl-, calcium salt
This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

Hydrocarbons, C10, aromatics, <1% naphthalene
This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment 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.

The definitive assignment of this material to the appropriate EWC group and thus its proper EWC code will depend on the use that is made of this material. Contact the authorized waste disposal services.

### SECTION 14. TRANSPORT INFORMATION

**Classification for ROAD and Rail transport (ADR/RID):**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1 UN number</td>
<td>UN 3017</td>
</tr>
<tr>
<td>14.2 Proper shipping name</td>
<td>ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, FLAMMABLE (Chloropyrifos, Aromatic hydrocarbon)</td>
</tr>
<tr>
<td>14.3 Class</td>
<td>6.1 (3)</td>
</tr>
<tr>
<td>14.4 Packing group</td>
<td>III</td>
</tr>
<tr>
<td>14.5 Environmental hazards</td>
<td>Chloropyrifos</td>
</tr>
<tr>
<td>14.6 Special precautions for user</td>
<td>Hazard identification No: 63</td>
</tr>
</tbody>
</table>

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

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1 UN number</td>
<td>UN 3017</td>
</tr>
<tr>
<td>14.2 Proper shipping name</td>
<td>ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, FLAMMABLE (Chloropyrifos, Aromatic hydrocarbon)</td>
</tr>
<tr>
<td>14.3 Class</td>
<td>6.1 (3)</td>
</tr>
<tr>
<td>14.4 Packing group</td>
<td>III</td>
</tr>
<tr>
<td>14.5 Environmental hazards</td>
<td>Chloropyrifos</td>
</tr>
<tr>
<td>14.6 Special precautions for user</td>
<td>EmS: F-E, S-D</td>
</tr>
<tr>
<td>14.7 Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code</td>
<td>Consult IMO regulations before transporting ocean bulk</td>
</tr>
</tbody>
</table>

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

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1 UN number</td>
<td>UN 3017</td>
</tr>
<tr>
<td>14.2 Proper shipping name</td>
<td>Organophosphorus pesticide, liquid, toxic, flammable (Chloropyrifos, Aromatic hydrocarbon)</td>
</tr>
<tr>
<td>14.3 Class</td>
<td>6.1 (3)</td>
</tr>
<tr>
<td>14.4 Packing group</td>
<td>III</td>
</tr>
<tr>
<td>14.5 Environmental hazards</td>
<td>Not applicable</td>
</tr>
<tr>
<td>14.6 Special precautions for user</td>
<td>No data available.</td>
</tr>
</tbody>
</table>

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.

SECTION 15. REGULATORY INFORMATION

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

Other regulations
Registration Number: PCS NO. 90541

This product contains only components that have been either pre-registered, registered, are exempt from registration or are regarded as registered according to Regulation (EC) No. 1907/2006 (REACH). The aforementioned indications of the REACH registration status are provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. It is the buyer’s/user’s responsibility to ensure that his/her understanding of the regulatory status of this product is correct.

15.2 Chemical Safety Assessment
For proper and safe use of this product, please refer to the approval conditions laid down on the product label.

SECTION 16. OTHER INFORMATION

Full text of H-statements referred to under sections 2 and 3.
H226 Flammable liquid and vapour.
H301 Toxic if swallowed.
H302 Harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H322 Harmful if inhaled.
H330 May cause respiratory irritation.
H335 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.

Full text of R-phrases referred to under sections 2 and 3
R10 Flammable.
R20/22 Harmful by inhalation and if swallowed.
R22 Harmful if swallowed.
R25 Toxic if swallowed.
R36/37/38 Irritating to eyes, respiratory system and skin.
R37 Irritating to respiratory system.
R38 Irritating to skin.
R41 Risk of serious damage to eyes.
R50 Very toxic to aquatic organisms.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R53 May cause long-term adverse effects in the aquatic environment.
R65 Harmful: may cause lung damage if swallowed.
R66 Repeated exposure may cause skin dryness or cracking.
R67 Vapours may cause drowsiness and dizziness.

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]
Flam. Liq. - 3 - H226 - On basis of test data.
Acute Tox. - 4 - H302 - On basis of test data.
Acute Tox. - 4 - H332 - On basis of test data.
Skin Irrit. - 2 - H315 - On basis of test data.
Eye Irrit. - 2 - H319 - On basis of test data.
Asp. Tox. - 1 - H304 - Calculation method
STOT SE - 3 - H335 - Calculation method
STOT SE - 3 - H336 - Calculation method
Aquatic Acute - 1 - H400 - On basis of test data.
Aquatic Chronic - 1 - H410 - Calculation method

Revision
Identification Number: 101202923 / A293 / Issue Date: 21.07.2014 / Version: 1.0
DAS Code: EF-1551
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend
<table>
<thead>
<tr>
<th>ACGIH</th>
<th>USA, ACGIH Threshold Limit Values (TLV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IE OEL</td>
<td>Ireland, List of Chemical Agents and Occupational Exposure Limit Values - Schedule 1</td>
</tr>
<tr>
<td>OEL Notation</td>
<td>Absorbed via Skin, Biological Exposure Indice</td>
</tr>
<tr>
<td>OELV - 8 hrs (TWA)</td>
<td>Occupational exposure limit value (8-hour reference period)</td>
</tr>
<tr>
<td>TWA</td>
<td>8-hour, time-weighted average</td>
</tr>
</tbody>
</table>

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.

DOW AGROSCIENCES LIMITED 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/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/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.