SAFETY DATA SHEET

DOW AGROSCIENCES LIMITED

Safety Data Sheet according to Reg. (EU) No 2015/830

Product name: DURSBAN™ WG Insecticide

Revision Date: 23.09.2016
Version: 7.2
Print Date: 23.09.2016

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 identifier
Product name: DURSBAN™ WG 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
CPC2 CAPITAL PARK
FULBOURN
CAMBRIDGE
England
CB21 5XE
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 (EC) No 1272/2008:
Acute toxicity - Category 4 - Oral - H302
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.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008:

Hazard pictograms

Signal word: WARNING

Hazard statements

H302	Harmful if swallowed.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statements

P301 + P312	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P391	Collect spillage.
P501	Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste.

Supplemental information

EUH401	To avoid risks to human health and the environment, comply with the instructions for use.
EUH208	Contains: 1,2-benzisothiazolin-3-one. May produce an allergic reaction.

2.3 Other hazards

No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

This product is a mixture.

CASRN / EC-No. / Index-No.	REACH Registration Number	Concentration	Component	Classification: REGULATION (EC) No 1272/2008

CASRN 2921-88-2 **EC-No.** 220-864-4 **Index-No.** 015-084-00-4	_	75.0%	Chlorpyrifos (ISO)	Acute Tox. - 3 - H301 Aquatic Acute - 1 - H400 Aquatic Chronic - 1 - H410
CASRN 68585-47-7 **EC-No.** 271-557-7 **Index-No.** –	_	< 5.0 %	Sulfuric acid, mono-C10-16-alkyl esters, sodium salts	Skin Irrit. - 2 - H315 Eye Irrit. - 2 - H319
CASRN 67-56-1 **EC-No.** 200-659-6 **Index-No.** 603-001-00-X	01-2119433307-44	< 1.0 %	Methanol	Flam. Liq. - 2 - H225 Acute Tox. - 3 - H301 Acute Tox. - 3 - H331 Acute Tox. - 3 - H311 STOT SE - 1 - H370
CASRN 2402-79-1 **EC-No.** 219-283-9 **Index-No.** –	01-2119425199-35	< 1.0 %	2,3,5,6-Tetrachloropyridine	Acute Tox. - 4 - H302 Skin Sens. - 1 - H317 Aquatic Chronic - 2 - H411
CASRN 7631-86-9 **EC-No.** 231-545-4 **Index-No.** –	_	< 1.0 %	Silica	Not classified
CASRN 3689-24-5 **EC-No.** 222-995-2 **Index-No.** 015-027-00-3	_	< 0.3 %	sulfotep (ISO)	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

If present in this product, any not classified components disclosed above for which no country specific OEL value(s) is(are) indicated under Section 8, are being disclosed as voluntarily disclosed components.
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.

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.

Ingestion: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Never 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: 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). Maintain adequate ventilation and oxygenation of the patient. If exposed, plasma and red blood cell cholinesterase tests may indicate significance of exposure (baseline data are useful). 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.

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. Phosphorous compounds. Nitrogen oxides. Hydrogen chloride. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. Pneumatic conveying and other mechanical handling operations can generate combustible dust. To reduce the potential for dust explosions, do not permit dust to accumulate. Dense smoke is produced when product burns.

5.3 Advice for firefighters
Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Consider feasibility of a controlled burn to minimize environment damage. Foam fire extinguishing system is preferred because uncontrolled water can spread possible contamination. Soak thoroughly with water to cool and prevent re-ignition. If material is molten, do not apply direct waterstream. Use fine water spray or foam. 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. Hand held dry chemical or carbon dioxide extinguishers may be used for small fires. Move container from fire area if this is possible without hazard. 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). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures: Isolate area. Spilled material may cause a slipping hazard. 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. Spills or discharge to natural waterways is likely to kill aquatic organisms.

6.3 Methods and materials for containment and cleaning up: Contain spilled material if possible. Small spills: 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.

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. Do not swallow. Avoid breathing dust or mist. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Use with adequate ventilation. Good housekeeping and controlling of dusts are necessary for safe handling of product.

7.2 Conditions for safe storage, including any incompatibilities: Store in a dry place. Store in original container. Do not store near food, foodstuffs, drugs or potable water supplies. Avoid temperatures above 70°C (158°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.

Component	Regulation	Type of listing	Value/Notation
Chlorpyrifos (ISO)	ACGIH	TWA Inhalable fraction and vapor	0.1 mg/m3
	ACGIH	TWA	SKIN, BEI
	GB EH40	TWA	SKIN
	GB EH40	STEL	SKIN
	GB EH40	TWA	0.2 mg/m3
	GB EH40	STEL	0.6 mg/m3
Methanol	ACGIH	TWA	200 ppm
	ACGIH	STEL	250 ppm
	ACGIH	TWA	SKIN, BEI
	ACGIH	STEL	SKIN, BEI
	2006/15/EC	TWA	260 mg/m3 200 ppm
	2006/15/EC	TWA	SKIN
	GB EH40	TWA	SKIN
	GB EH40	STEL	SKIN
	GB EH40	TWA	266 mg/m3 200 ppm
	GB EH40	STEL	333 mg/m3 250 ppm
2,3,5,6-Tetrachloropyridine	US WEEL	TWA	5 mg/m3
	Dow IHG	TWA	2 mg/m3
Silica	Dow IHG	TWA Respirable fraction.	0.2 mg/m3
	GB EH40	TWA inhalable dust	6 mg/m3 , Silica
	GB EH40	TWA Respirable dust	2.4 mg/m3 , Silica
sulfotep (ISO)	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
	GB EH40	TWA	SKIN
	GB EH40	TWA	0.1 mg/m3
chlorpyrifos-methyl	Dow IHG	TWA	0.1 mg/m3
	Dow IHG	TWA	SKIN

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 local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use safety glasses (with side shields). Safety glasses (with side shields) should be consistent with EN 166 or equivalent. If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles. Chemical goggles should be consistent with EN 166 or equivalent.

Skin protection

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). When prolonged or frequently repeated contact may occur, a glove is recommended to prevent contact with the solid material. 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: Wear clean, body-covering clothing.

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, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator.

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	Granules.
Color	White
Odor	Sour Obnoxious
Odor Threshold	No data available
pH	7.01 1% *CIPAC MT 75.2* (1% aqueous suspension)
Melting point/range	No data available
Freezing point	No data available
Boiling point (760 mmHg)	Not applicable
Flash point	**closed cup** Not applicable
Evaporation Rate (Butyl Acetate = 1)	No data available
Flammability (solid, gas)	No
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor Pressure	No data available
Relative Vapor Density (air = 1)	No data available
Relative Density (water = 1)	No data available
Water solubility	Dispersible
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Kinematic Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No significant increase (>5C) in temperature.

9.2 Other information

Bulk density	0.424 g/ml *Tapped Volumetric*
Molecular weight	No data available

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 dangerous reaction known under conditions of normal use.

10.2 Chemical stability: Unstable at elevated temperatures.

10.3 Possibility of hazardous reactions: Polymerization will not occur.

10.4 Conditions to avoid: Avoid temperatures above 70 °C
Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems.

10.5 Incompatible materials: Avoid contact with: Acids. Bases. Oxidizers.

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. Organic sulfides. Sulfur dioxide. Toxic gases are released during decomposition.

SECTION 11: TOXICOLOGICAL INFORMATION

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

11.1 Information on toxicological effects
Acute toxicity

Acute oral toxicity
Low 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. Excessive exposure may produce organophosphate type cholinesterase inhibition.

As product:
LD50, Rat, female, 519 mg/kg

Acute dermal toxicity
Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product:
LD50, Rat, male and female, > 5,000 mg/kg

Acute inhalation toxicity
Inhalation is unlikely due to physical state. Prolonged exposure is not expected to cause adverse effects. For respiratory irritation: No relevant data found.

The LC50 has not been determined.
LC50, Rat, 4 Hour, dust/mist, > 5 mg/l Estimated.

Skin corrosion/irritation
Brief contact is essentially nonirritating to skin.

Serious eye damage/eye irritation
Solid or dust may cause irritation or corneal injury due to mechanical action.
May cause slight temporary eye irritation.
Corneal injury is unlikely.

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)
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

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.

Carcinogenicity
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.

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.

Mutagenicity
Based on a majority of negative data and some equivocal or marginally positive results, active ingredient is considered to have minimal genetic toxicity potential.

Aspiration Hazard
Based on physical properties, not likely to be an aspiration hazard.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicological information appears 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), semi-static test, 96 Hour, 0.12 mg/l

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), static test, 48 Hour, 0.000036 mg/l

Acute toxicity to algae/aquatic plants
EbC50, Pseudokirchneriella subcapitata (green algae), static test, 96 Hour, Biomass, 1 mg/l

ErC50, Pseudokirchneriella subcapitata (green algae), Growth inhibition, 72 Hour, 1.8 mg/l

Toxicity to Above Ground Organisms
Material is moderately toxic to birds on an acute basis (LD50 between 51 and 500 mg/kg).
Material is moderately toxic to birds on a dietary basis (LC50 between 501 and 1000 ppm).

dietary LC50, Colinus virginianus (Bobwhite quail), 740mg/kg diet.

oral LD50, Colinus virginianus (Bobwhite quail), 53mg/kg bodyweight.

oral LD50, Apis mellifera (bees), 48 Hour, 1.1micrograms/bee

contact LD50, Apis mellifera (bees), 48 Hour, 0.54micrograms/bee

Toxicity to soil-dwelling organisms
LC50, Eisenia fetida (earthworms), 14 d, 681 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

Photodegradation
Test Type: Half-life (indirect photolysis)
Sensitizer: OH radicals
Atmospheric half-life: 1.4 Hour
Method: Estimated.

Sulfuric acid, mono-C10-16-alkyl esters, sodium salts

Biodegradability: Material is expected to be readily biodegradable.

Biodegradation: > 80 %

Methanol

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
10-day Window: Pass
Biodegradation: 99 %
Exposure time: 28 d
Method: OECD Test Guideline 301D or Equivalent

2,3,5,6-Tetrachloropyridine

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

Theoretical Oxygen Demand: 0.81 mg/mg

Photodegradation
Atmospheric half-life: 685 d
Method: Estimated.

Silica

Biodegradability: Biodegradation is not applicable.

sulfotep (ISO)

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.

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.

Sulfuric acid, mono-C10-16-alkyl esters, sodium salts

Bioaccumulation: No relevant data found.

Methanol

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): -0.77 Measured
Bioconcentration factor (BCF): < 10 Fish Measured

2,3,5,6-Tetrachloropyridine

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 3.32 Measured

Silica

Bioaccumulation: Partitioning from water to n-octanol is not applicable.

sulfotep (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): 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

12.4 Mobility in soil

Chlorpyrifos (ISO)

Expected to be relatively immobile in soil (Koc > 5000).
Partition coefficient (Koc): 8151

Sulfuric acid, mono-C10-16-alkyl esters, sodium salts

No relevant data found.

Methanol

Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient (Koc): 0.44 Estimated.

2,3,5,6-Tetrachloropyridine

Potential for mobility in soil is medium (Koc between 150 and 500).
Partition coefficient (Koc): 240 Estimated.

Silica

No relevant data found.

sulfotep (ISO)

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

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).

Sulfuric acid, mono-C10-16-alkyl esters, sodium salts
This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Methanol
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).

2,3,5,6-Tetrachloropyridine
This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

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

sulfotep (ISO)
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).

12.6 Other adverse effects

Chlorpyrifos (ISO)
This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Sulfuric acid, mono-C10-16-alkyl esters, sodium salts
No relevant data found.

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

2,3,5,6-Tetrachloropyridine
No relevant data found.

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

sulfotep (ISO)
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.

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):

14.1	**UN number**	UN 3077
14.2	**UN proper shipping name**	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(Chlorpyrifos)
14.3	**Transport hazard class(es)**	9
14.4	**Packing group**	III
14.5	**Environmental hazards**	Chlorpyrifos
14.6	**Special precautions for user**	Hazard Identification Number: 90

Classification for SEA transport (IMO-IMDG):

14.1	**UN number**	UN 3077
14.2	**UN proper shipping name**	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(Chlorpyrifos)
14.3	**Transport hazard class(es)**	9
14.4	**Packing group**	III
14.5	**Environmental hazards**	Chlorpyrifos
14.6	**Special precautions for user**	EmS: F-A, S-F
14.7	**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):

14.1	**UN number**	UN 3077
14.2	**UN proper shipping name**	Environmentally hazardous substance, solid, n.o.s.(Chlorpyrifos)
14.3	**Transport hazard class(es)**	9
14.4	**Packing group**	III
14.5	**Environmental hazards**	Not applicable

14.6 Special precautions for user No data available.

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

REACh Regulation (EC) No 1907/2006
This product contains only components that have been either pre-registered, registered, are exempt from registration, are regarded as registered or are not subject to registration 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.

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: ENVIRONMENTAL HAZARDS
Number in Regulation: E1
100 t
200 t

Other regulations
Registration Number: MAFF 09153

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.

H225	Highly flammable liquid and vapour.
H300	Fatal if swallowed.
H301	Toxic if swallowed.

H302	Harmful if swallowed.
H310	Fatal in contact with skin.
H311	Toxic in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H331	Toxic if inhaled.
H370	Causes damage to organs if swallowed.
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.

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) No 1272/2008
Acute Tox. - 4 - H302 - On basis of test data.
Aquatic Acute - 1 - H400 - On basis of test data.
Aquatic Chronic - 1 - H410 - On basis of test data.

Revision
Identification Number: 101202515 / A293 / Issue Date: 23.09.2016 / Version: 7.2
DAS Code: EF-1315
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
2006/15/EC	Europe. Indicative occupational exposure limit values
ACGIH	USA. American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLV)
Dow IHG	Dow Industrial Hygiene Guideline
GB EH40	UK. EH40 WEL - Workplace Exposure Limits
SKIN	Absorbed via skin
SKIN, BEI	Absorbed via Skin, Biological Exposure Indice
STEL	Short-term exposure limit
TWA	Time weighted average
US WEEL	USA. Workplace Environmental Exposure Levels (WEEL)

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'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.