SUMITOMO CHEMICAL (U.K.) PLC

SAFETY DATA SHEET
DIPEL® DF

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

1.1. Product identifier

Product name	**DIPEL® DF**
Name	*Bacillus thuringiensis subsp. kurstaki,* 540 g/kg water dispersible granule
GIFAP Code	WG
Synonyms; trade names	

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

Identified uses	Biological insecticide (agricultural use)
Uses advised against	Not for public use

1.3. Details of the supplier of the safety data sheet

Supplier	Sumitomo Chemical (UK) Plc
	Hythe House
	200 Shepherds Bush Road
	Hammersmith
	London
	W6 7NL
	regulatory@scuk.sumitomo-chem.co.uk
	+44 (0)203 538 3099

1.4. Emergency telephone number

Emergency telephone	+44 (0)1235 239670 (EU)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards	None
Health hazards	None
Environmental hazards	None

2.2. Label elements

Pictogram	None
Signal word	None
Hazard statements	None
Precautionary statements	P261 Avoid breathing spray. P280 Wear protective gloves/protective clothing/eye protection/face protection. P302+P352 IF ON SKIN: Wash with plenty of water. P363 Wash contaminated clothing before reuse.

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	P501 Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except empty clean containers which can be disposed of as non-hazardous waste.
Supplemental label information	EUH401 To avoid risks to human health and the environment, comply with the instructions for use.
Special risks and safety precautions (Commission Regulation (EU) 547/2011):	
General provisions	SP1 Do not contaminate water with the product or its container. (Do not clean application equipment near surface water.)
Specific safety precautions	SPo2 Wash all protective clothing after use.

2.3. Other hazards Contains *Bacillus thuringiensis*. Micro-organisms may have the potential to provoke sensitising reactions.

SECTION 3: Composition/information on ingredients

3.1. Substances
Classification according to Regl 1272/2008

3.2 Mixtures
Classification according to Regl 1272/2008

Bacillus thuringiensis subsp. kurstaki (Strain ABTS-351, serotype 3a3b)	**54.0%**
CAS number: NA	
Classification	
None	

Sodium sulphate	**>0.1%**
CAS number: 7757-82-6	
Classification	
Eye Irrit. 2 – H319	

The full text for all hazard statements is displayed in Section 16.

Other information Code ID : ABG-6404

SECTION 4: First aid measures

4.1. Description of first aid measures

General information	In all cases of doubt, seek medical attention.
Inhalation	Move to fresh air. If symptoms persist, seek medical advice.
Ingestion	Rinse mouth. Never induce vomiting in unconscious or confused persons. Always seek medical attention
Skin contact	Remove contaminated clothing. Wash skin immediately with water. Launder clothes before reuse.
Eye contact	Rinse thoroughly with plenty of water. Eyelids should be held away from the eyeball to ensure thorough rinsing. Seek medical advice if irritation develops.

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

General information	Dust may be irritating to the respiratory tract and cause symptoms of bronchitis.
	May cause an allergic skin reaction.

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

Notes for the doctor Symptomatic treatment is advised.

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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Dry chemical powder. Carbon dioxide (CO2). Sand. Foam. Water.

Unsuitable extinguishing media None known.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products Thermal decomposition during combustion may evolve toxic and irritant vapours.

5.3. Advice for firefighters

Protective actions during firefighting Water used to extinguish a fire should not be allowed to enter the drainage system or watercourses.

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA), suitable protective clothing and eye/face protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment, and emergency procedures

For non-emergency personnel Avoid contact with skin. Wear protective gloves, safety goggles or face shield, and suitable protective clothing. Remove ignition sources. Evacuate the danger area.

For emergency responders Avoid contact with skin. Wear protective nitrile gloves, safety goggles or face shield, and suitable protective clothing. Remove ignition sources. Evacuate the danger area or consult an expert.

6.2. Environmental precautions

Environmental precautions Do not allow escape into sewage system or watercourses. Do not wash residues into drains or other waterways.

6.3. Methods and material for containment and cleaning up

Containment of a spill Do not allow escape into sewage system or watercourses.

Methods for cleaning up Clean up spills immediately. Sweep up and place into sealable containers. Dig up heavily contaminated soil and place into drums. Use a damp cloth to clean floors and other objects, and also place in sealable container. Dispose of all waste and contaminated clothing in the same manner as waste chemicals (i.e. via an authorized disposal facility). Do not wash residues into drains or other waterways.

6.4. Reference to other sections

Reference to other sections For personal protection see section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Fire and explosion prevention No specific recommendations.

Usage precautions Follow precautions for safe handling described in this safety data sheet. Avoid spilling. Do not allow to escape into sewage system or water courses.

Advice on general occupational hygiene Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in a dry and cool place. Keep away from sunlight. Keep container in a well-ventilated place. Keep away from food, drink and animal feedingstuffs. Do not drink, eat and smoke in work areas.

Other information Do not mix with water (except for the normal preparation).

7.3. Specific end use(s)

Specific end use(s) See label on the container.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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Occupational exposure limits	There is no national exposure limit for this product.
	No chemical safety report is required for this kind of product.

8.2. Exposure controls

Appropriate engineering controls	Provide adequate ventilation.
Eye/face protection	Wear safety goggles or face shield.
Hand protection	Wear protective nitrile gloves.
Other skin and body protection	Wear suitable protective clothing.
Hygiene measures	Launder clothes before reuse.
Respiratory protection	In case of dust formation, use dust mask.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Name	*Bacillus thuringiensis subsp. kurstaki,* 540 g/kg water dispersible granule
Appearance	Granule (visual inspection)
Colour	Light brown (visual inspection)
Odour	Musty, yeast-like odour (Olfactory assessment)
Odour threshold	Not determined
pH	pH (diluted solution): 4.49 (1%) @ 25°C (CIPAC MT 75.2)
Melting point	Not determined
Initial boiling point and range	Not applicable
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability (solid, gas)	Not “highly flammable” (EEC A.10)
Upper/lower flammability or explosive limits	Not determined
Vapour pressure	Not applicable
Vapour density	Not applicable
Relative density	Not applicable
Bulk density	0.473 g/ml @ 23°C (FIFRA 151A-16)
Solubility(ies)	Suspends and partially soluble in water
Solubility in other solvents	Not applicable
Partition coefficient	Not applicable
Auto-ignition temperature	252°C (EEC A.16)
Decomposition temperature	No decomposition up to the autoignition temperature
Viscosity	Not applicable
Explosive properties	Not explosive (based on the characteristics of the active substance and ingredients)
Oxidising properties	Not oxidising (based on the characteristics of the active substance and ingredients)

9.2. Other information

Relative vapour density (air = 1)	Not determined
Surface tension	Not determined

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	Stable under recommended storage and handling conditions. See also section 7.

10.2. Chemical stability

Stability	Stable for a minimum of 2 years under recommended storage and handling conditions. See section 7.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	None known.

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10.4. Conditions to avoid

Conditions to avoid Avoid high temperature, light, humidity.

10.5. Incompatible materials

Materials to avoid Oxidisers.

10.6. Hazardous decomposition products

Hazardous decomposition products Thermal decomposition may evolve toxic and irritant vapours. See also section 5.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Name *Bacillus thuringiensis subsp. kurstaki,* 540 g/kg water dispersible granule

Acute toxicity - oral

Acute toxicity - oral LD_{50}: >5050 mg/kg, Oral, Rat (OECD 401)

Acute toxicity - dermal

Acute toxicity - dermal LD_{50}: >2020 mg/kg, Dermal, Rabbit (OECD 402)

Acute toxicity - inhalation

Acute toxicity - inhalation LC_{50}, 4 hours: > 5.15 mg/l, nose only, Inhalation, Rat (OECD 425)

Skin corrosion/irritation

Skin corrosion/irritation Slightly irritating (OECD 404)

Serious eye damage/irritation

Serious eye damage/irritation Moderately irritating (OECD 405)

Skin sensitisation

Skin sensitisation Buehler test - Guinea pig: Not sensitising. (OECD 406)

Toxicological information on ingredients

Name Active substance; *Bacillus thuringiensis subsp. kurstaki (Strain ABTS-351),* technical grade

Germ cell mutagenicity

Genotoxicity – in vitro No validated methods available for microorganisms.

Genotoxicity – in vivo No validated methods available for microorganisms.

Carcinogenicity

Carcinogenicity (rat): Negative.

General information Current available studies for skin sensitisation assessment are not appropriate for micro-organisms. Consequently, products containing microbials are required to carry a precautionary phrase but are not classified.
Based on the available data, no classification criteria are met for any of these hazard classes.

Route of exposure This product is for agricultural use; therefore, the most probable routes of exposure are via skin or inhalation.

SECTION 12: Ecological information

12.1. Toxicity

Name *Bacillus thuringiensis subsp. kurstaki,* 540 g/kg water dispersible granule

Acute aquatic toxicity

Acute toxicity - algae EC_{50} 72 hours: 50.84 mg/l, *Pseudokirchneriella subcapitata* (OECD 201)

Acute toxicity - terrestrial LD_{50}, 48 hours, oral: >222.41 µg/bee *Apis mellifera* (Honeybee) (OECD 213)
LD_{50}, 48 hours, contact: >185.0 µg/bee *Apis mellifera* (Honeybee) (OECD 214)

Ecological information on ingredients

Name Active substance; *Bacillus thuringiensis subsp. kurstaki (Strain ABTS-351),* technical grade

Toxicity - fish LC_{50}, 32 days: >2.87 x 10^9 cfu/l test media (>143.5 mg as/l), Infectivity/pathogenicity, *Onchorhynchus mykiss* (Rainbow trout) (FIFRA Guideline 154-19)

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	LC_{50}, 32 days: >2.87 x 10^9 cfu/l test media (>143.5 mg as/l), Infectivity/pathogenicity, *Lepomis macrochirus* (Bluegill) (FIFRA Guideline 154-19)
Toxicity - aquatic invertebrates	EC_{50}, 21 days: 14 mg/l, adult mortality/immobility, *Daphnia magna* NOEC <5 mg/l (FIFRA 154-20) EC_{50}, 21 days: 13 mg/l, adult mortality/immobility, *Daphnia magna* EC_{50}, 21 days: 7.8 mg/l, reproduction, *Daphnia magna* NOEC = 2.5 mg/l (OECD 211)
Toxicity - terrestrial	LD_{50}, 14 days, oral: >4042 µg/bee *Apis mellifera* (Honeybee) (FIFRA 154A-24) NOEC, 5 days: >2857 mg/kg bw *Colinus virginianus* (Bobwhite quail) (FIFRA 154A-16) NOEC, 5 days: >2857 mg/kg bw *Anas platyrhynchos* (Mallard duck) (FIFRA 154A-16) LC_{50}, 30 days: >1000 mg/kg soil (no effect), *Eisenia foetida* (Earthworm) NOEC = 1000 mg/kg dry soil (OECD 207)

12.2. Persistence and degradability

Ecological information on ingredients

Name	Active substance; *Bacillus thuringiensis subsp. kurstaki (Strain ABTS-351),* technical grade
Degradation – biotic	Btk is naturally present in the environment; leaching is unlikely to occur.
Degradation – abiotic	Btk shows a rapid loss of activity in response to UV light; increasing humidity also contributes to this reduction. High values of pH (pH9) also decrease the insecticidal activity.

12.3. Bioaccumulative potential

Ecological information on ingredients

Name	Active substance; *Bacillus thuringiensis subsp. kurstaki (Strain ABTS-351),* technical grade
Bioaccumulative potential	Not applicable; the substance is not pathogenic to non-target organisms and has not been seen to reproduce in non-target organisms.

12.4. Mobility in soil

Ecological information on ingredients

Name	Active substance; *Bacillus thuringiensis subsp. kurstaki (Strain ABTS-351),* technical grade
Adsorption/desorption coefficient	Adsorption K_{Foc} values: not applicable for microbial substances Desorption $K_{Foc\text{-}des}$ values: not applicable for microbial substances

12.5. Results of PBT and vPvB assessment

Ecological information on ingredients

Name	Active substance; *Bacillus thuringiensis subsp. kurstaki (Strain ABTS-351),* technical grade
Results of PBT and vPvB assessment	Not required (no chemical safety report required).

12.6. Other adverse effects

Ecological information on ingredients

Name	Active substance; *Bacillus thuringiensis subsp. kurstaki (Strain ABTS-351),* technical grade
Other adverse effects	No other known adverse effects on the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal methods According to local regulations. For further advice, contact manufacturer.

SECTION 14: Transport information

14.1. UN Number

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UN No. (ADR/RID)	None
UN No. (IMDG)	None
UN No. (ICAO)	None

14.2. UN proper shipping name

Proper shipping name (ADR/RID)	Not relevant
Proper shipping name (IMDG)	Not relevant
Proper shipping name (ICAO)	Not relevant

14.3. Transport hazard class(es)

ADR/RID class	Not restricted
ADR/RID label	Not relevant
IMDG class	Not restricted
ICAO class/division	Not restricted

14.4. Packing group

ADR/RID packing group	Not relevant
IMDG packing group	Not relevant
ICAO packing group	Not relevant

14.5. Environmental hazards

Marine pollutant	No

14.6. Special precautions for user

No other special precaution required.

EmS	Not relevant

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the ICB Code

Transport in bulk according to Annex II of MARPOL 73/78 and the ICB Code	Not applicable

SECTION 15: Regulatory information

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

EU legislation	There is no specific regulation/legislation for this mixture.

15.2. Chemical safety assessment

No chemical safety assessment is required for this mixture.

SECTION 16: Other information

Method for evaluating information referred to in Article 9 of Regulation (EC) No 1272/2008 used for the purpose of classification	Classification based on; tests, properties of the active substance
Classification abbreviations and acronyms	Eye Irrit. = Eye irritation
Abbreviations and acronyms Used in the safety data sheet	ASTM : American Society for Testing Material CAS: Chemical Abstracts Service. CFR : Code of Federal Regulations CLP : Classification, Labelling and Packaging EC : European Community EEC : European Economic Community EPA : Environmental Protection Agency (USA)

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EPPO : European and Mediterranean Plant Protection Organization
EU : European Union
GIFAP : International Group of National Associations of manufacturers of Agrochemical Products
GHS: Globally Harmonized System.
ID : identification
i.e. : shortening of the Latin expression id est, which is translated as “that is.”
OECD : Organisation for Economic Co-operation and Development
PBT: Persistent, Bioaccumulative and Toxic substance.
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.
Regl : Regulation
US EPA : United States Environmental Protection Agency
vPvB: Very Persistent and Very Bioaccumulative.
w/w : weight per weight
FIFRA : Federal Insecticide, Fungicide and Rodenticide Act of 1972
LD_{50}: Lethal Dose to 50% of a test population (Median Lethal Dose).
LC_{50}: Lethal Concentration to 50 % of a test population.
EC_{50}: 50% of maximal Effective Concentration.
NOEC: No Observed Effect Concentration.
NOAEL: No Observed Adverse Effect Level.
ECb50 : 50% of maximal Effective Concentration on biomass.
NOECb : No Observed Effect Concentration on biomass.
DT_{50} : degradation time for 50% of a compound
log Pow : Octanol-water partition coefficient.
Koc : organic carbon adsorption coefficient
BCF: Bioconcentration Factor.
UN: United Nations.
No. : number
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
IMDG: International Maritime Dangerous Goods.
ICAO-TI: Technical Instructions for the Safe Transport of Dangerous Goods by Air.
N.O.S. : Not Otherwise Specified
EmS : Emergency Response Procedures for Ships Carrying Dangerous Goods
MARPOL 73/78: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978.
IBC: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk (International Bulk Chemical Code).
SDS : Safety Data Sheet

Vol. = volume
CIPAC : Collaborative International Pesticides Analytical Council
USP : United States Pharmacopeia
WG: Water dispersible granules

Revision comments Sections were modified as follows: Identity of the company/undertaking

Hazard statements in full H319 Causes serious eye irritation

Reference of the SDS Based on Btk32000WGCLP/EU/310gb from SCAE

This information only concerns the above mentioned product for the specific use mentioned and is not valid for such product used in combination with any other product. The information is to our best present knowledge correct and complete and is given in good faith as of the date indicated. It is the user’s responsibility to use this information as appropriate for his own particular use of this product.