SAFETY DATA SHEET
According to Regulation (EC) No 1907/2006 (REACH)
and Commission Regulation (EU) No 453/2010

DIPEL DF

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

1.1. Product identifier

DiPel DF
Bacillus thuringiensis subsp. kurstaki, 540 g/kg water dispersible granule
GIFAP code: WG
EC number: not applicable

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

Biological insecticide (agricultural use)
Not for public use

1.3. Details of the supplier of the safety data sheet

INTERFARM (UK) LIMITED
36 Newgate Street
Doddington
Cambridgeshire PE15 0SR
United Kingdom
Tel.: +44 (0)1354 741414
email: technical@interfarm.co.uk

Manufacturer of the product

VALENT BIOSCIENCES CORPORATION
870 Technology Way, Suite 100
Libertyville, Illinois 60048
USA
Tel.: +1 847 9684700

1.4. Emergency Telephone number 24/24hrs

UK & Ireland; +44 (0)333 333 9962

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Not classified as hazardous according to regulation (EC) No 1272/2008 (CLP)

Signal word(s) none

Pictogram (s) none

Hazard statement(s) none

2.2. Label elements

Signal word(s) none

Pictogram (s) none

Hazard statement(s) none

Precautionary statement(s)

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
P501 (UK): 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.
EUH 401: 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 SP 1: Do not contaminate water with the product or its container (Do not clean application equipment near surface water).

Specific safety precautions SPo 2: Wash all protective clothing after use.

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2. This product is to be considered as a mixture in conformance to EU regulations.

Composition/Information on main ingredients

Number	g/kg	CAS number	Chemical name
1	540	NA	*Bacillus thuringiensis subsp. kurstaki* (Strain ABTS-351, serotype 3a3b)
2	>1	7757-82-6	Sodium sulphate

Number	EC number	Annex-1 listing	Regl 1272/2008 Pict.	Hazard statements
1	/	yes	none	none
2	/	NA	GHS07	H319

Other information code ID: ABG-6404

4. FIRST AID MEASURES

4.1. Description of first aid measures

General In all cases of doubt, seek medical attention.

Inhalation Move to fresh air. If symptoms persist, seek medical advice.

Skin Remove contaminated clothing. Wash skin immediately with water. Launder clothes before reuse.

Eye Rinse thoroughly with plenty of water. Eyelids should be held away from the eyeball to ensure thorough rinsing. Seek medical advice if irritation develops.

Ingestion Rinse mouth. Never induce vomiting in unconscious or confused persons. Always seek medical attention.

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

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

Symptomatic treatment is advised.

5. FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing media Dry chemical powder, carbon dioxide, foam, sand or water.

Unsuitable extinguishing media None known.

5.2. Special hazards arising from the substance or mixture

Thermal decomposition during combustion may evolve toxic and irritant vapours.

5.3. Advice for fire-fighters Wear self-contained breathing apparatus. Wear suitable protective clothing and eye/face protection.

Other information Water used to extinguish a fire should not be allowed to enter the drainage system or watercourses.

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 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.

Clean-up procedures 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 For personal protection see section 8.

7. HANDLING AND STORAGE

7.1. Precautions for safe handling The usual precautions for handling chemicals should be observed. For personal protection see section 8.

Fire and explosion prevention No specific recommendations.

7.2. Conditions for safe storage, including any incompatibilities

Storage requirements 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) See label on the container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters 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.

Individual protection measures

Respiratory In case of dust formation, use dust mask.

Hand Wear protective nitrile gloves.

Eye Wear safety goggles or face shield.

Skin and body Wear suitable protective clothing.

Other information Launder clothes before reuse.

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 assessment)
Colour	light brown (Visual assessment)
Odour	musty, yeast like odour (Olfactory assessment)
Odour threshold	not determined
pH value	4.49 (1% in water, 25°C) (CIPAC MT 75.2)
Melting point/freezing point	not determined
Initial boiling point & boiling range	not applicable
Flash point	not applicable
Evaporation rate	not applicable
Flammability	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 in water	suspends and partially soluble in water

Solubility in other solvents	not applicable
Partition coefficient n-octanol/water	not applicable
Autoignition temperature	252°C (EEC A.16)
Decomposition temperature	no decomposition up to the autoignition temperature
Dynamic viscosity	not applicable
Kinematic 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

10. STABILITY AND REACTIVITY

10.1. Reactivity Stable under recommended storage and handling conditions (see also section 7).

10.2. Chemical stability Stable for a minimum of 2 years under recommended storage and handling conditions (see section 7).

10.3. Possibility of hazardous reactions
None known

10.4. Conditions to avoid Avoid high temperature, light, humidity

10.5. Incompatible materials Oxidisers

10.6. Hazardous decomposition products
Thermal decomposition during combustion may evolve toxic and irritant vapours (see also section 5).

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

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

Acute toxicity	
Oral	LD_{50} rat: >5050 mg/kg (OECD 401)
Dermal	LD_{50} rabbit: >2020 mg/kg (OECD 402)
Inhalation	LC_{50} rat (4 hours): > 5.15 mg/l (nose only) (OECD 425)
Irritation	
Skin	slightly irritating (OECD 404)
Eye	moderately irritating (OECD 405)
Sensitization	not sensitising (Buehler test) (OECD 406)

The following data are applicable to ingredient(s) listed below:

Name	***Active substance, Bacillus thuringiensis subsp. kurstaki (Strain ABTS-351), technical grade***
Other toxicological information	- Genotoxicity: No validated methods available for microorganisms. - carcinogenicity, rat: negative.

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.

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

12. ECOLOGICAL INFORMATION

12.1. Toxicity

Name	***Bacillus thuringiensis subsp. kurstaki, 540 g/kg water dispersible granule***
Algae	Acute toxicity, 72h- (*Pseudokirchneriella subcapitata*): EC_{50} = 50.84 mg/l (OECD 201)

NOEC = 10 mg/l

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

The following data are applicable to the ingredient(s) listed below:

Name ***Active substance, Bacillus thuringiensis subsp. kurstaki technical grade***

Fish Infectivity/pathogenicity, 32d-LC50 (*Oncorhynchus mykiss*):
> 2.87 x 10^9 cfu/l test media (>143.5 mg as/l) (FIFRA Guideline 154-19)
Infectivity/pathogenicity, 32d-LC50 (*Lepomis macrochirus*):
> 2.87 x 10^9 cfu/l test media (>143.5 mg as/l) (FIFRA Guideline 154-19)

Daphnia Toxicity, (*Daphnia magna*) 21d:
first study: EC50: (adult mortality / immobility): 14 mg/l
NOEC < 5 mg/l (FIFRA 154-20)
2nd study: EC50 (adult mortality/immobility): 13 mg/L
EC50 (reproduction): 7.8 mg/L
NOEC = 2.5 mg/l (OECD 211

Bees Oral toxicity, 14d-LD50 (*Apis mellifera*): >4042 µg/bee (FIFRA 154A-24)

Birds Toxicity, 5d-NOEC (Bobwhite quail): > 2857 mg/kg b.w./d (FIFRA 154A-16)
(Mallard duck): > 2857 mg/kg b.w./d (FIFRA 154A-16)

Earthworm Toxicity, 30days-LC_{50} (*Eisenia foetida*): > 1000 mg/kg soil (no effect). (OECD 207)
NOEC (*Eisenia foetida*) = 1000 mg/kg dry soil

12.2. Persistence and degradability

The following data are applicable to the ingredient(s) listed below:

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

The following data are applicable to the ingredient(s) listed below:

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

Bioaccumulation 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

The following data are applicable to the ingredient(s) listed below:

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

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

Not required (no chemical safety report required).

12.6. Other adverse effects No other known adverse effects on the environment.

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Substance and/or Mixture According to local regulations. For further advice contact manufacturer.

Contaminated packaging According to local regulations.

14. TRANSPORT INFORMATION

Land transport ADR/RID, Sea transport IMO/IMDG, Air transport ICAO-TI/IATA-DGR:

14.1. UN Number None

14.2. UN proper shipping name	Not relevant			
14.3. Transport hazard class(es)				
	Land transport ADR/RID class:	not restricted	label:	not relevant
	IMO/IMDG code class:	not restricted		
	Air transport ICAO-TI/IATA-DGR class:	not restricted		
14.4. Packing group	Not relevant			
14.5. Environmental hazards	Marine pollutant:	no		
14.6. Special precautions for user	EMS:	not relevant		
	No other special precaution required.			

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

15. REGULATORY INFORMATION

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

There is no specific regulation/legislation for this mixture.

15.2. Chemical safety assessment

No chemical safety assessment is required for this mixture.

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 and properties of the active substance.

Changes made to the previous version: Section 1; change to emergency telephone number. Sections 2, 3, 4, 11, 12, were modified to remove any reference to directives 2001/59/EC or 1999/45/EC, add changes due to ATP4, new data and information about skin sensitisation assessment. [Based on Btk32000WGCLP/EU/310gb from SCAE]

Full text of hazard statement(s) used in this document:
H319: Causes serious eye irritation.

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 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.