

SAFETY DATA SHEET according to Regulation (EC) No 1907/2006

TITUS®

Version 4.0 (replaces: Version 3.1)

Revision Date 06.02.2014

Ref. 13000000224

This Safety Data Sheet adheres to the standards and regulatory requirements of Great Britain and may not meet the regulatory requirements in other countries.

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Product name: TITUS®
 Synonyms: B10022922
 DPX-E9636 25WG

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

Use of the Substance/Mixture: Herbicide

1.3. Details of the supplier of the safety data sheet

Company: Du Pont (UK) Limited
 Wedgwood Way
 Stevenage, Herts. SG1 4QN
 United Kingdom

Telephone: +44 (0) 1438 734 000
 E-mail address: sds-support@che.dupont.com

1.4. Emergency telephone number

Emergency telephone number: +44 (0) 8456 006 640

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture**

Acute aquatic toxicity, Category 1 H400: Very toxic to aquatic life.
 Chronic aquatic toxicity, Category 1 H410: Very toxic to aquatic life with long lasting effects.

Dangerous for the environment: R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

2.2. Label elements

Warning

H410 Very toxic to aquatic life with long lasting effects.

Special labelling of certain substances and mixtures:

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

P391 Collect spillage.

P501 Dispose of contents/container to a waste disposal plant.

SP 1 Do not contaminate water with the product or its container (Do not clean application equipment near surface water/Avoid contamination via drains from farmyards and roads).

2.3. Other hazards

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).

This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

SECTION 3: Composition/information on ingredients

3.1. Substances

not applicable

3.2. Mixtures

Registration number	Classification according Directive 67/548/EEC	Classification according Regulation (EU) 1272/2008 (CLP)	Concentration
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Rimsulfuron (CAS-No. 122931-48-0)

	N; R50/53	Aquatic Acute 1; H400 Aquatic Chronic 1; H410	25 %
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Alkylphthalenesulfonic acid, sodium salt/formaldehyde polycondensate

	Xi;R36/38	Skin Irrit. 2; H315 Eye Irrit. 2; H319	>= 10 - < 15 %
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The above products are REACH compliant; Registration number(s) may not be provided because substance(s) are exempted, not yet registered under REACH or are registered under another regulatory process (biocide uses, plant protection products), etc.

For the full text of the R-phrases mentioned in this Section, see Section 16.

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: Never give anything by mouth to an unconscious person. For specialist advice physicians should contact the National Poisons Information Service: Tel. 111 for England and Wales and Tel. 08454 24 24 24 for Scotland.

Inhalation: Move to fresh air. Consult a physician after significant exposure. Artificial respiration and/or oxygen may be necessary.

Skin contact: Take off contaminated clothing and shoes immediately. Wash off immediately with soap and plenty of water. In the case of skin irritation or allergic reactions see a physician. Wash contaminated clothing before re-use.

Eye contact: If easy to do, remove contact lens, if worn. Hold eye open and rinse slowly and gently with water for 15-20 minutes. If eye irritation persists, consult a specialist.

Ingestion: Obtain medical attention. DO NOT induce vomiting unless directed to do so by a physician or poison control center. If victim is conscious: Rinse mouth with water.

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

Symptoms: No cases of human intoxication are known and the symptoms of experimental intoxication are not known.

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

Treatment: Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: Water spray, Dry chemical, Foam, Carbon dioxide (CO₂)

Extinguishing media which shall not be used for safety reasons: High volume water jet, (contamination risk)

5.2. Special hazards arising from the substance or mixture

Specific hazards during firefighting: Hazardous decomposition products formed under fire conditions. Carbon dioxide (CO₂) Nitrogen oxides (NO_x)

5.3. Advice for firefighters

Special protective equipment for firefighters: Wear full protective clothing and self-contained breathing apparatus.

Further information: Prevent fire extinguishing water from contaminating surface water or the ground water system. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

(on small fires) If area is heavily exposed to fire and if conditions permit, let fire burn itself out since water may increase the area contaminated. Cool containers / tanks with water spray.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: Control access to area. Keep people away from and upwind of spill/leak. Avoid dust formation. Avoid breathing dust. Use personal protective equipment. Refer to protective measures listed in sections 7 and 8.

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Use appropriate container to avoid environmental contamination. Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained. If the spill area is porous, the contaminated material must be collected for subsequent treatment or disposal. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3. Methods and materials for containment and cleaning up

Methods for cleaning up: Clean-up methods - small spillage Sweep up or vacuum up spillage and collect in suitable container for disposal.

Clean-up methods - large spillage Avoid dust formation. Contain spillage, pick up with an electrically protected vacuum cleaner or by wet-brushing and transfer to a container for disposal according to local regulations (see section 13).

If spill area is on ground near valuable plants or trees, remove 5 cm of top soil after initial clean-up.

Other information: Never return spills in original containers for re-use. Dispose of in accordance with local regulations.

6.4. Reference to other sections

For personal protection see section 8., For disposal instructions see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling: Use only according to our recommendations. Use only clean equipment. Avoid contact with skin, eyes and clothing. Do not breathe dust or spray mist. Wear personal protective equipment. For personal protection see section 8. Prepare the working solution as given on the label(s) and/or the user instructions. Use prepared working solution as soon as possible - Do not store. Remove and wash contaminated clothing before re-use. Avoid exceeding of the given occupational exposure limits (see section 8).

Advice on protection against fire and explosion: Keep away from heat and sources of ignition. Avoid dust formation in confined areas. During processing, dust may form explosive mixture in air.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers: Store in a place accessible by authorized persons only. Store in original container. Keep in properly labelled containers. Keep



containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep away from food, drink and animal feedingstuffs.

Advice on common storage: No special restrictions on storage with other products.

Other data: Stable under recommended storage conditions.

7.3. Specific end use(s)

Plant protection products subject to Regulation (EC) No 1107/2009.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

If sub-section is empty then no values are applicable.

8.2. Exposure controls

Engineering measures: Contains no substances with occupational exposure limit values.

Ensure adequate ventilation, especially in confined areas.
Provide for appropriate exhaust ventilation and dust collection at machinery.

Eye protection: Safety glasses with side-shields conforming to EN166

Hand protection:

Material: Nitrile rubber
Glove thickness: 0.3 mm
Glove length: Standard glove type.
Protection index: Class 6
Wearing time: > 480 min

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. The suitability for a specific workplace should be discussed with the producers of the protective gloves. Gloves must be inspected prior to use. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Gauntlets shorter than 35 cm long shall be worn under the combination sleeve. Before removing gloves clean them with soap and water.

Skin and body protection:

Manufacturing and processing work: Full protective clothing Type 5 (EN 13982-2)

Mixer and loaders must wear: Full protective clothing Type 5 + 6 (EN ISO 13982-2/ EN 13034) Rubber apron Nitrile rubber boots (EN 13832-3 / EN ISO 20345).



Spray application - outdoor: Tractor / sprayer with hood: No personal body protection normally required.

Tractor / sprayer without hood: Low application (horticulture, field crops): Full protective clothing Type 5 + 6 (EN ISO 13982-2 / EN 13034) Nitrile rubber boots (EN 13832-3 / EN ISO 20345).

Backpack / knapsack sprayer: Low application (horticulture, field crops): Full protective clothing Type 4 (EN 14605) Nitrile rubber boots (EN 13832-3 / EN ISO 20345).

Mechanical automatized spray application in closed tunnel: No personal body protection normally required during the application. However, gloves and a long sleeved shirt shall be worn when handling the treated plants after the application.

To optimize the ergonomiy it may be recommended to use cotton underwear when wearing some fabrics. Take advice from supplier. Garment materials that are resistant to both water vapour and air will maximise wearing comfort. Materials should be robust to maintain the integrity and barrier in use. The permeation resistance of the fabric must be verified independently of the « type » protection recommended, to ensure an appropriate performance level of the material adequate to the corresponding agent and type of exposure.

Protective measures: The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific

workplace. All chemical protective clothing should be visually inspected prior to use. Clothing and gloves should be replaced in case of chemical or physical damage or if contaminated. Only protected handlers may be in the area during application.

Hygiene measures:

Handle in accordance with good industrial hygiene and safety practice. Regular cleaning of equipment, work area and clothing. Keep working clothes separately. Contaminated work clothing should not be allowed out of the workplace. Wash hands and face before breaks and immediately after handling the product. When using do not eat, drink or smoke. Keep away from food, drink and animal feedingstuffs. For environmental protection remove and wash all contaminated protective equipment before re-use. Remove clothing/PPE immediately if material gets inside. Wash thoroughly and put on clean clothing. Dispose of rinse water in accordance with local and national regulations.

Respiratory protection: Manufacturing and processing work: Half mask with a particle filter FFP1 (EN149).

Mixer and loaders must wear: Half mask with a particle filter FFP1 (EN149)

Spray application - outdoor: Tractor / sprayer with hood: No personal respiratory protective equipment normally required.

Tractor / sprayer without hood: Low application (horticulture, field crops): Half mask with a particle filter FFP1 (EN149)

Backpack / knapsack sprayer: Low application (horticulture, field crops): Half mask with a particle filter FFP1 (EN149)

Mechanical automatized spray application in closed tunnel: No personal respiratory protective equipment normally required.

Explosive properties : Not explosive
 Lower explosion limit/ lower flammability limit : 0.15 vol%
 Upper explosion limit/ upper flammability limit : Not available for this mixture.
 Vapour pressure : Not available for this mixture.
 Bulk density : 727 kg/m³ , packed
 Water solubility : dispersible
 Partition coefficient: n-octanol/water : not applicable
 Viscosity, kinematic : not applicable
 Relative vapour density : not applicable
 Evaporation rate : not applicable

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form : solid
 Colour : beige
 Odour : very faint
 Odour Threshold : not determined
 pH : 7.0 at 10 g/l (25 °C)
 Melting point/range : Not available for this mixture.
 Boiling point/boiling range : not applicable
 Flash point : not applicable
 Flammability (solid, gas) : The product is not flammable.
 Thermal decomposition : Not available for this mixture.
 Auto-ignition temperature : 380 °C
 Oxidizing properties : The product is not oxidizing.

9.2. Other information

Phys.-chem./other information : No other data to be specially mentioned.

SECTION 10: Stability and reactivity

10.1. Reactivity: No hazards to be specially mentioned.

10.2. Chemical stability: The product is chemically stable under recommended conditions of storage, use and temperature.

10.3. Possibility of hazardous reactions: No dangerous reaction known under conditions of normal use. Polymerization will not occur. No decomposition if stored and applied as directed.

10.4. Conditions to avoid: Processing temperature : > 100 °C To avoid thermal decomposition, do not overheat. Under severe dusting conditions, this material may form explosive mixtures in air.

10.5. Incompatible materials: No materials to be especially mentioned.

10.6. Hazardous decomposition products: No materials to be especially mentioned.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity

LD50 / rat : > 5,000 mg/kg

Method: OECD Test Guideline 401

Information source: Internal study report (Data on the product itself)

Acute inhalation toxicity

LC50 / 4 h rat : > 7.5 mg/l

Method: OECD Test Guideline 403

Information source: Internal study report (Data on the product itself)

Acute dermal toxicity

LD50 / rabbit : > 2,000 mg/kg

Method: OECD Test Guideline 402

Information source: Internal study report (Data on the product itself)

Skin irritation

rabbit

Result: No skin irritation

Method: OECD Test Guideline 404

Information source: Internal study report (Data on the product itself)

Eye irritation

rabbit

Result: No eye irritation

Method: OECD Test Guideline 405

Information source: Internal study report (Data on the product itself)

Sensitisation

guinea pig Maximisation Test (GPMT)

Result: Animal test did not cause sensitization by skin contact.

Method: OECD Test Guideline 406

Information source: Internal study report (Data on the product itself)

Repeated dose toxicity

- Rimsulfuron
The following effects occurred at levels of exposure that significantly exceed those expected under labeled usage conditions.
Oral -rat
altered blood chemistry, Liver effects, Organ weight changes.

Mutagenicity assessment

- Rimsulfuron
Tests on bacterial or mammalian cell cultures did not show mutagenic effects. Did not show mutagenic effects in animal experiments.

Carcinogenicity assessment

- Rimsulfuron
Did not show carcinogenic effects in animal experiments.

Toxicity to reproduction assessment

- Rimsulfuron
Animal testing did not show any effects on fertility.

Assessment teratogenicity

- Rimsulfuron
Evidence suggests the substance is not a developmental toxin in animals

STOT - single exposure

The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT - repeated exposure

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard

The mixture does not have properties associated with aspiration hazard potential.

SECTION 12: Ecological information

12.1. Toxicity**Toxicity to fish**

static test / LC50 / 96 h / Oncorhynchus mykiss (rainbow trout): 1,000 mg/l
Method: OECD Test Guideline 203
(Data on the product itself) Information source: Internal study report

Toxicity to aquatic plants

ErC50 / 72 h / Pseudokirchneriella subcapitata: 0.2 mg/l
Method: OECD Test Guideline 201
(Data on the product itself) Information source: Internal study report

EC50 / 14 d / Lemna gibba (duckweed): 0.0315 mg/l
Method: US EPA Test Guideline OPP 122-2 & 123-2
Information source: Internal study report (Data on the product itself)

Toxicity to aquatic invertebrates
static test / EC50 / 48 h / Daphnia magna (Water flea): > 1.000 mg/l
Method: OECD Test Guideline 202
(Data on the product itself) Information source: Internal study report

Toxicity to soil dwelling organisms
LC50 / 14 d / Eisenia fetida (earthworms): > 1,000 mg/kg
Method: OECD Test Guideline 207
(Data on the product itself) Information source: Internal study report

Toxicity to other organisms
LD50 / Colinus virginianus (Bobwhite quail): > 2,250 mg/kg
Method: US EPA Test Guideline OPP 71-1
(Data on the product itself) Information source: Internal study report
LC50 / 8 d / Anas platyrhynchos (Mallard duck): > 5,620 mg/kg
Method: US EPA Test Guideline OPP 71-2
(Data on the product itself) Information source: Internal study report
LD50 / 48 h / Apis mellifera (bees): 0.0411 mg/kg
Method: OECD Test Guideline 213
Oral (Data on the product itself) Information source: Internal study report

LD50 / 48 d / Apis mellifera (bees): 0.0178 mg/kg
Method: OECD Test Guideline 214
Contact (Data on the product itself) Information source: Internal study report

Chronic toxicity to fish
• Rimsulfuron
NOEC / 90 d / Oncorhynchus mykiss (rainbow trout): 110 mg/l

Chronic toxicity to aquatic Invertebrates
• Rimsulfuron
NOEC / 21 d / Daphnia magna (Water flea): 0.82 mg/l

12.2. Persistence and degradability

Biodegradability
Not readily biodegradable. Estimation based on data obtained on active ingredient.

12.3. Bioaccumulative potential

Bioaccumulation
Does not bioaccumulate. Estimation based on data obtained on active ingredient.

12.4. Mobility in soil

Mobility in soil
Potentially mobile, but the leaching potential is mitigated by rapid degradation.

12.5. Results of PBT and vPvB assessment**PBT and vPvB assessment**

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT). / This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

12.6. Other adverse effects**Additional ecological information**

No other ecological effects to be specially mentioned. See product label for additional application instructions relating to environmental precautions.

SECTION 13: Disposal considerations**13.1. Waste treatment methods**

Product: In accordance with local and national regulations. Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities. Do not contaminate ponds, waterways or ditches with chemical or used container.

Contaminated packaging: Do not re-use empty containers.

SECTION 14: Transport information**ADR**

- | | |
|-------------------------------------|--|
| 14.1. UN number: | 3077 |
| 14.2. UN proper shipping name: | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Rimsulfuron) |
| 14.3. Transport hazard class(es): | 9 |
| 14.4. Packing group: | III |
| 14.5. Environmental hazards: | Environmentally hazardous |
| 14.6. Special precautions for user: | |
| Tunnel restriction code: | (E) |

IATA_C

- | | |
|---|--|
| 14.1. UN number: | 3077 |
| 14.2. UN proper shipping name: | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Rimsulfuron) |
| 14.3. Transport hazard class(es): | 9 |
| 14.4. Packing group: | III |
| 14.5. Environmental hazards : | Environmentally hazardous |
| 14.6. Special precautions for user: | |
| DuPont internal recommendations and transport guidance: | ICAO / IATA cargo aircraft only |

IMDG

- 14.1. UN number: 3077
 14.2. UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Rimsulfuron)
 14.3. Transport hazard class(es): 9
 14.4. Packing group: III
 14.5. Environmental hazards : Marine pollutant
 14.6. Special precautions for user:
 no data available

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

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

Other regulations: The product is classified as dangerous in accordance with Regulation (EC) No. 1272/2008. Take note of Dir 94/33/EC on the protection of young people at work. Take note of Dir 92/85/EEC on the safety and health at work of pregnant workers. Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work. Take note of Directive 96/82/EC on the control of major-accident hazards involving dangerous substances. Take note of Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values.

15.2. Chemical Safety Assessment

A Chemical Safety Assessment is not required for this/these products. The mixture is registered as a plant protection product under Regulation (EC) No. 1107/2009. Refer to the label for exposure assessment information.

SECTION 16: Other information**Text of R-phrases mentioned in Section 3**

- R36/38 Irritating to eyes and skin.
 R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Full text of H-Statements referred to under section 3.

- H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H400 Very toxic to aquatic life.
 H410 Very toxic to aquatic life with long lasting effects.

Other information: professional use

Abbreviations and acronyms

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute toxicity estimate
CAS-No.	Chemical Abstracts Service number
CLP	Classification, Labelling and Packaging
EbC50	Concentration at which 50% reduction of biomass is observed
EC50	Median effective concentration
EN	European Norm
EPA	Environmental Protection Agency
ErC50	Concentration at which a 50% inhibition of growth rate is observed
EyC50	Concentration at which 50 % inhibition of yield is observed
IATA_C	International Air Transport Association (Cargo)
IBC	International Bulk Chemical Code
ICAO	International Civil Aviation Organization
ISO	International Standard Organization
IMDG	International Maritime Dangerous Goods
LC50	Median Lethal Concentration
LD50	Median Lethal Dose
LOEC	Lowest Observed Effect Concentration
LOEL	Lowest observable effect level
MARPOL n.o.s.	International Convention for the Prevention of Marine Pollution from Ships Not Otherwise Specified
NOAEC	No Observed Adverse Effect Concentration

NOAEL	No observed adverse effect level
NOEC	No Observed Effect Concentration
NOEL	No Observed Effect Level
OECD	Organisation for Economic Co-operation and Development
OPPTS	Office of Prevention, Pesticides and Toxic Substances
PBT	Persistent, Bioaccumulative and Toxic
STEL	Short term exposure limit
TWA	time weighted average
vPvB	very Persistent and very Bioaccumulative

Further information

Before use read DuPont's safety information., Take notice of the directions of use on the label.

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The above information relates only to the specific material(s) designated herein and may not be valid for such material(s) used in combination with any other materials or in any process or if the material is altered or processed, unless specified in the text.



Titus®

SAMPLE



NOIR




SAMPLE

