TITUS®

Version 5.0
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This SDS adheres to the standards and regulatory requirements of the European Community and may not meet the regulatory requirements of other countries.

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

Product identifier

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

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

Use of the Substance/Mixture	Herbicide

Details of the supplier of the safety data sheet

Company	:	DuPont International Operations S.a.r.l. 2, chemin du Pavillon CH-1218 Le Grand-Saconnex / GE Switzerland
Telephone	:	+41-22-717.5111
Telefax	:	+41-22-717.5109
E-mail address	:	sds-support@che.dupont.com

Emergency telephone number

Emergency telephone number	:	+44-(0)8456-006.640
Supplier	:	Du Pont de Nemours (France) S.A.S. 82, rue de Wittelsheim F-68701 Cernay Cedex
Telephone	:	+33 3 89 38 38 38

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

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

Label elements

Dangerous for the environment

R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Special labelling of certain substances and mixtures	To avoid risks to man and the environment, comply with the instructions for use.
S 2	Keep out of the reach of children.
S13	Keep away from food, drink and animal feedingstuffs.
S20/21	When using do not eat, drink or smoke.
S46	If swallowed, seek medical advice immediately and show this container or label.
S35	This material and its container must be disposed of in a safe way.
S57	Use appropriate container to avoid environmental contamination.
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).

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).

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

not applicable

Mixtures

Registration number	Classification according Directive 67/548/EEC	Classification according Regulation 1272/2008 (CLP)	Concentration
Rimsulfuron (CAS-No.122931-48-0)			
	N;R50/53	Aquatic Acute 1; H400 Aquatic Chronic 1; H410	25 %
Potassium dihydrogenorthophosphate (CAS-No.7778-77-0) (EC-No.231-913-4)			
	C;R34	Skin Corr. 1B; H314	>= 10 - < 15 %

Alkylnaphthalenesulfonic acid, sodium salt/formaldehyde polycondensate (CAS-No.68425-94-5)

	Xi;R36/38	Skin Irrit. 2; H315 Eye Irrit. 2; H319	>= 10 - < 15 %

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.

4. FIRST AID MEASURES

Description of first aid measures

General advice : Never give anything by mouth to an unconscious person.

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.

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.

Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

5. FIREFIGHTING MEASURES

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)

Special hazards arising from the substance or mixture

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

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.

6. ACCIDENTAL RELEASE MEASURES

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.

Environmental precautions

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.

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.

Reference to other sections

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

7. HANDLING AND STORAGE

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.

Conditions for safe storage, including any incompatibilities

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

Other data : Stable under recommended storage conditions.

Specific end uses

Plant protection products subject to Directive 91/414/EEC.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

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

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 6 (EN 13034) Nitrile rubber boots (EN 13832-3 / EN ISO 20345). Middle-height application

(vegetables, viticulture): 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 6 (EN 13034) Nitrile rubber boots (EN 13832-3 / EN ISO 20345). Middle-height application (vegetables, viticulture): Full protective clothing Type 5 + 6 (EN ISO 13982-2 / EN 13034) Nitrile rubber boots (EN 13832-3 / EN ISO 20345). Closed tunnel spray application: No personal body protection normally required. To optimize the ergonomy 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 P1 (EN 143). Middle-height application (vegetables, viticulture): Half mask with a particle filter P1 (EN 143). Backpack / knapsack sprayer: Low application (horticulture, field crops): Half mask with a particle filter P1 (EN 143). Middle-height application (vegetables, viticulture): Half mask with a particle filter P1 (EN 143). Closed tunnel spray application: No personal respiratory protective equipment normally required.

9. PHYSICAL AND CHEMICAL PROPERTIES

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.
Flash point	: not applicable
Flammability (solid, gas)	: Does not sustain combustion.
Thermal decomposition	: Not available for this mixture.
Autoignition temperature	: 380 °C
Oxidizing properties	: The product is not oxidizing.
Explosive properties	: Not explosive
Lower explosion limit/ lower flammability limit	: Not available for this mixture.
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
Evaporation rate	: not applicable

Other information

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

10. STABILITY AND REACTIVITY

Reactivity	: No hazards to be specially mentioned.
Chemical stability	: The product is chemically stable.
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.
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.

Incompatible materials : No materials to be especially mentioned.

Hazardous decomposition products : No materials to be especially mentioned.

11. TOXICOLOGICAL INFORMATION

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 / 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
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.

12. ECOLOGICAL INFORMATION

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

EC50 / 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

Persistence and degradability

Biodegradability

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

Bioaccumulative potential

Bioaccumulation

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

Mobility in soil

Mobility in soil

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

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).

Other adverse effects

Additional ecological information

No other ecological effects to be specially mentioned

13. DISPOSAL CONSIDERATIONS

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. Dispose of rinse water as waste water. Do not contaminate ponds, waterways or ditches with chemical or used container.
Contaminated packaging	:	Do not re-use empty containers.

14. TRANSPORT INFORMATION

ADR

Class:	9
Packaging group:	III
Classification Code:	M7
HI No:	90
UN number:	3077
Labelling No.:	9
Proper shipping name:	Environmentally hazardous substance, solid, n.o.s. (Rimsulfuron)
Tunnel restriction code:	(E)

IATA_C

Class:	9
Packaging group:	III
UN number:	3077
Labelling No.:	9MI
Proper shipping name:	Environmentally hazardous substance, solid, n.o.s. (Rimsulfuron)

IMDG

Class:	9
Packaging group:	III
UN number:	3077
Labelling No.:	9
Proper shipping name:	Environmentally hazardous substance, solid, n.o.s. (Rimsulfuron, Rimsulfuron)

Marine pollutant: Marine pollutant

Further information : ICAO / IATA cargo aircraft only

15. REGULATORY INFORMATION

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

no data available

Chemical Safety Assessment

A Chemical Safety Assessment is not required for this/these products
The mixture is registered as a plant protection product under Directive 91/414.
Refer to the label for exposure assessment information.

16. OTHER INFORMATION

Text of R-phrases mentioned in Section 3

R34	Causes burns.
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.

H314	Causes severe skin burns and eye damage.
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

Further information

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

Significant change from previous version is denoted with a double bar.

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.