Titus®

A water dispersible granule formulation containing 250 g/kg rimsulfuron, a sulfonylurea. For the control of certain broad-leaved weeds in potatoes and forage maize.

The (COSHH) Control of Substances Hazardous to Health Regulations may apply to the use of this product at work.

ADAMA AGRICULTURAL SOLUTIONS UK LTD
Unit 15, Thatcham Business Village, Colthrop Way, Thatcham, Berkshire, RG19 4LW
Telephone: (01635) 860555 Technical Helpline: (01635) 876622
For advice on medical emergencies, fires or major spills telephone the National Chemical Emergency Centre on 01865 407333
ukenquiries@adama.com
www.adama.com

WARNING

Shake well before use
Protect from frost

120 g e

Batch No.:

K-41374/31607 - UK - COVERS PAGE 1

Titus®
Herbicide containing 250 g/kg rimsulfuron
Very toxic to aquatic life with long lasting effects
Avoid release to the environment.
Collect spillage.
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.
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).
To avoid risks to human health and the environment, comply with the instructions for use.
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To avoid risks to human health and the environment, comply with the instructions for use

**SHAKE WELL BEFORE USE**

**PROTECT FROM FROST**

120 g e
Herbicide MAPP 15050

A water dispersible granule formulation containing 250 g/kg rimsulfuron, a sulfonylurea, for the control of certain broad-leaved weeds in potatoes and forage maize.

The (COSHH) Control of Substances Hazardous to Health Regulations may apply to the use of this product at work.

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Approval holder:
Du Pont (U.K.) Limited, Crop Protection Products
4th Floor, Kings Court, London Road, Stevenage
Hertfordshire - SG1 2NG
Tel: 01438 734450 or enquiry.agproducts@dupont.com
Emergency Tel : 0870 820 0418

Marketing company:
Adama Agricultural Solutions UK Ltd,
Unit 15, Thatcham Business Village
Thatcham, Berkshire, RG19 4LW
Tel: 01635 860555
Technical Help line: 01635 876622
Email. ukenquiries@adama.com - www.adama.com
National Poisons Information service: 111 (England and Wales) or 08454 24 24 24 (Scotland)
**DIRECTIONS FOR USE**

**IMPORTANT:** This information is approved as part of the Product Label. All instructions within this section must be read carefully in order to obtain safe and successful use of this product.

**Restrictions**

- TITUS must not be applied to any crop suffering from stress as a result of drought, water-logging, low temperatures, pest or disease attack, nutrient or lime deficiency or other factors reducing crop growth.
- Due to the high level of activity of the herbicide, special care must be taken to avoid damage by drift onto plants outside the target area, or onto surface waters or ditches. Thorough cleansing of equipment is also very important – see below.
- Do not apply to potatoes grown for certified seed.
- Before using TITUS on crops grown for processing, consult processor
- Further cultivation or ridging following application should be avoided.
- Do not apply TITUS to forage maize treated with organophosphate (OP) insecticides.
- Do not apply TITUS on forage maize undersown with grass or clover.

**Weed Control**

TITUS works mainly by foliar action. When tank-mixed with a suitable adjuvant or herbicide partner, it controls a range of broad-leaved weeds and gives a moderate level of control of Common Couch. It is most effective when applied to small actively growing weeds. Susceptible weeds cease growth almost immediately after application and symptoms can be seen within about ten days. Weed control may be reduced when soil conditions are very dry.

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**Susceptible Weeds**

The susceptibility ratings of weeds in the following tables refer to good spray cover and good growing conditions.

<table>
<thead>
<tr>
<th>Weed Species</th>
<th>TITUS (50 g/ha) + Citowett* 0.1% v/v</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cot - 2 leaf</td>
</tr>
<tr>
<td></td>
<td>2-6 leaf</td>
</tr>
<tr>
<td>Black-Bindweed</td>
<td>MS</td>
</tr>
<tr>
<td>Black Nightshade</td>
<td>MR</td>
</tr>
<tr>
<td>Charlock*</td>
<td>S</td>
</tr>
<tr>
<td>Cleavers</td>
<td>S</td>
</tr>
<tr>
<td>Common Chickweed</td>
<td>S</td>
</tr>
<tr>
<td>Fat-hen</td>
<td>S</td>
</tr>
<tr>
<td>Hempnettle</td>
<td>SS</td>
</tr>
<tr>
<td>Knotgrass</td>
<td>MS</td>
</tr>
<tr>
<td>Pale Persicaria</td>
<td>MS</td>
</tr>
<tr>
<td>Redshank</td>
<td>S</td>
</tr>
<tr>
<td>Red Dead Nettle</td>
<td>S</td>
</tr>
<tr>
<td>Scentless Mayweed</td>
<td>S</td>
</tr>
<tr>
<td>Small Nettle</td>
<td>S</td>
</tr>
<tr>
<td>Volunteer Oilseed Rape*</td>
<td>S</td>
</tr>
</tbody>
</table>

S = Susceptible    MS = Moderately Susceptible
MR = Moderately Resistant    R = Resistant

*A rate of 30 g/ha + Citowett at 0.1% v/v is sufficient to control charlock and volunteer oilseed rape.*
When applied for the control of broad-leaved weeds, TITUS will give suppression of Common Couch top growth.

**Weed resistance**
This product contains rimsulfuron, which is an ALS inhibitor, also classified by the Herbicide Resistance Action Committee as ‘Group B’. Use only as part of a resistance management strategy that includes cultural methods of control and does not use ALS inhibitors as the sole chemical method of grass-weed control.

When herbicides with the same mode of action are used repeatedly over several years in the same field, selection of resistant biotypes can take place. These can propagate and may become dominating. A weed species is considered resistant to a herbicide if it survives a correctly applied treatment at the recommended dose. Development of resistance within a weed species can be avoided or delayed by alternating (or tank-mixing) with suitable products having a different mode of action.

**Soil**
TITUS can be used on all soils and is unaffected by high organic matter.

**Weather**
Avoid high light intensity (full sunlight) and high temperatures (above 21°C) on the day of spraying. Avoid periods of substantial day to night temperature changes or when frost is expected. Very dry conditions may reduce the effectiveness of the product.

**Volume and application**
When applying TITUS, care should be taken not to overlap spray swaths. Apply in 200 litres of water per hectare, using suitable equipment to give good spray cover. The spray quality should be MEDIUM (as defined by BCPC), applied at a pressure of 2 - 3 bar.

**Following crops**
Only winter wheat should be drilled in the same calendar year as a crop treated with TITUS. Only barley, wheat or maize should be sown in the spring of the year following treatment. In the second autumn following treatment, any crop may be drilled.

**Mixing**
Before using TITUS, make sure that the spraying equipment is clean and free from contamination with other pesticides. TITUS mixes easily with water, but the following mixing procedure should be followed: Quarter fill the spray tank with water, start the agitation and add the required quantity of TITUS directly to the tank without prior creaming. Continue agitation while topping up the tank and while spraying. Do not leave the sprayer standing without agitation with chemical in it.

**Compatibility**
- TITUS is compatible with metribuzin (eg Shotput (M15968)) on potatoes. Metribuzin mixtures should not be applied to metribuzin intolerant varieties (refer to metribuzin label).
• In any tank-mix, add TITUS to the tank first and ensure it is fully dispersed before adding the partner product. Products should only be tank-mixed if each product can be applied within the label recommendations for its use.
• Do not apply TITUS in sequence or in tank-mixture with a product containing any other sulfonylurea.

POTATOES

Crop safety
TITUS may cause transient chlorosis and/or crop stunting from which the crop usually recovers. TITUS must not be used on potatoes grown for seed.

Timing
TITUS must be applied in the spring pre-emergence of the crop up until the crop is 25 cm high.

Dose
Apply TITUS at 50 g product/ha plus Citowett at 0.1% v/v.

FORAGE MAIZE

Crop safety
TITUS can be applied to the following varieties. Please contact your distributor for details on other varieties.

<table>
<thead>
<tr>
<th>Andrea</th>
<th>Diamante</th>
<th>Facet</th>
<th>Folio</th>
<th>LG2080 (Alarik)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LG2246 (Levis)</td>
<td>Melody</td>
<td>Rival</td>
<td>Sonia</td>
<td>Trophee</td>
</tr>
</tbody>
</table>

TITUS may cause transient chlorosis and/or crop stunting from which the crop usually recovers. Do not apply TITUS to forage maize treated with organophosphate (OP) insecticides.

Timing
TITUS must be applied in the spring post-emergence up to the 4-collar stage of the forage maize.
Dose
Apply TITUS at 50 g product/ha plus Citowett at 0.1% v/v.

WARNING
EXTREME CARE SHOULD BE TAKEN TO AVOID DAMAGE BY DRIFT ONTO PLANTS OUTSIDE THE TARGET AREA OR ONTO SURFACE WATERS OR DITCHES OR LAND INTENDED FOR CROPPING. SPRAYING EQUIPMENT SHOULD NOT BE DRAINED OR FLUSHED ONTO LAND PLANTED WITH OR INTENDED FOR PLANTING WITH TREES OR CROPS OTHER THAN POTATOES OR FORAGE MAIZE

SPRAY TANK CLEAN-OUT
TO AVOID SUBSEQUENT DAMAGE TO CROPS OTHER THAN POTATOES OR FORAGE MAIZE IMMEDIATELY AFTER SPRAYING TITUS THOROUGHLY CLEAN ALL SPRAY EQUIPMENT INCLUDING INSIDE AND OUTSIDE OF LID USING ALL CLEAR® EXTRA SPRAYER CLEANER ACCORDING TO THE FOLLOWING LABEL INSTRUCTIONS:
1. Immediately after spraying, drain tank completely. Any contamination on the outside of the spraying equipment should be removed by washing with clean water.
2. Rinse inside of tank with clean water and flush through boom and hoses using at least one-tenth of the spray tank volume. Drain tank completely.
3. Half fill tank with clean water and add DuPont ALL CLEAR® EXTRA at the recommended rate. Agitate and then flush the boom and hoses with the cleaning solution. Top up with water making sure the tank is completely full and allow to stand for 15 minutes with agitation. Again flush the boom and hoses and drain tank completely.
4. Nozzles and filters should be removed and cleaned separately with an ALL CLEAR® EXTRA solution containing 50 ml of ALL CLEAR® EXTRA per 10 litres of water.
5. Rinse the tank with clean water and flush through the boom and hoses using at least one-tenth of the spray tank volume. Drain tank completely.

NOTE: If it is not possible to drain the tank completely, step 3 must be repeated before going on to step 4.

NOTICE TO BUYER
All goods supplied by us are of a high grade and we believe them to be suitable for any purpose for which we expressly supply them, but as we cannot exercise control over their mixing or use, all conditions and warranties, statutory or otherwise, as to the quality or fitness for any purpose of our goods are excluded and no responsibility will be accepted by us for any damage or injury whatsoever arising from their storage, handling, application or use.

All manufacturers trademarks are duly acknowledged.
SAFETY PRECAUTIONS

Operator protection
WASH CONCENTRATE from skin or eyes immediately
DO NOT BREATHE SPRAY
WASH HANDS AND EXPOSED SKIN before meals and after work
Engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment:
WEAR SUITABLE PROTECTIVE GLOVES when handling the concentrate.
However, engineering controls may replace personal protective equipment if a COSHH assessment shows that they provide an equal or higher standard of protection.

Environmental Protection
EXTREMELY DANGEROUS TO FISH OR OTHER AQUATIC LIFE. Do not contaminate surface waters or ditches with chemical or used container.
Extreme care must be taken to avoid spray drift onto non-crop plants outside of the target area.

Storage and disposal
KEEP OUT OF REACH OF CHILDREN.
DO NOT RE-USE CONTAINER for any purpose
KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place
EMPTY CONTAINER COMPLETELY and dispose of safely

WARNING
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).

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

Titus®
Herbicide containing 250 g/kg rimsulfuron

Very toxic to aquatic life with long lasting effects
Avoid release to the environment.
Collect spillage.
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.
IMPORTANT INFORMATION

FOR USE ONLY AS A PROFESSIONAL HERBICIDE

Crops: Potatoes and forage maize

Maximum individual dose: 50 g/ha

Maximum number of applications: One per crop

Latest time of application: Potatoes: before most advanced plants are 25 cm high
Forage maize: before 4-collar fully emerged stage

Other specific restrictions:
This product may only be applied from 1st February in the year of harvest until the specified latest time of application.
To avoid the build up of resistance do not apply this or any other product containing an ALS inhibitor herbicide with claims for control of grass-weeds more than once to any crop.

READ THE LABEL BEFORE USE. USING THIS PRODUCT IN A MANNER THAT IS INCONSISTENT WITH THE LABEL MAY BE AN OFFENCE. FOLLOW THE CODE OF PRACTICE FOR USING PLANT PROTECTION PRODUCTS.
SAFETY DATA SHEET according to Regulation (EC) No 1907/2006

TITUS®

Version 4.0 (replaces: Version 3.1)
Revision Date 06.02.2014 Ref. 130000000224

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 (U.K.) Limited, Crop Protection Products
4th Floor, Kings Court, London Road, Stevenage
Hertfordshire - SG1 2NG
UNITED KINGDOM

1.4. Emergency telephone number
Emergency telephone number: 0870 820 0418

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
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

3.2. Mixtures

<table>
<thead>
<tr>
<th>Registration number</th>
<th>Classification according Directive 67/548/EEC</th>
<th>Classification according Regulation (EU) 1272/2008 (CLP)</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rimsulfuron (CAS-No. 122931-48-0)</td>
<td>N; R50/53 Aquatic Acute 1; H400 Aquatic Chronic 1; H410</td>
<td>&gt;= 10 - &lt; 15 %</td>
<td>25 %</td>
</tr>
<tr>
<td>Alkynaphthalenesulfonic acid, sodium salt/formaldehyde polycondensate</td>
<td>Xi; R36/38 Skin Irrit. 2; H315 Eye Irrit. 2; H319</td>
<td>&gt;= 10 - &lt; 15 %</td>
<td>25 %</td>
</tr>
</tbody>
</table>

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: 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 (NOx)

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)

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 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 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.

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.

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

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)

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
Toxicity to aquatic invertebrates
EC50 / 14 d / Lemna gibba (duckweed): 0.0315 mg/l
Information source: Internal study report (Data on the product itself)

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

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
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


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  International Convention for the Prevention of Marine Pollution from Ships n.o.s.
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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