



|  |  |
|--|--|
| <b>MSDS : 032</b><br><b>Issued : April 2006</b><br><b>Revised: August 2008</b><br><b>Page : 2 of 8</b> |  |
|--|--|

---

#### 4. FIRST-AID MEASURES:

**Inhalation:** Remove patient from exposure, keep warm and at rest. Obtain medical attention as a precaution.

**Skin contact:** Take off immediately all contaminated clothing. Wash skin immediately with cold water, followed by soap and water. Such action is essential to minimize contact with the skin. Contaminated clothing should be washed before re-use.

**Eye contact:** Immediately irrigate with eyewash solution or clean water, holding the eyelids apart, for at least 15 minutes. Obtain immediate medical attention.

**Ingestion:** If swallowed immediately give two glasses of water and induce vomiting. Seek medical advice immediately in cases of significant exposure.

**Note to physician:**

There is no antidote. Symptomatic treatment and supportive therapy as indicated.

---

#### 5. FIRE-FIGHTING MEASURES:

Dust particles might form explosive mixtures in air, which may be ignited by open flame. Keep fire exposed containers cool by spraying with water.

**Extinguishing Media:**

For small fires, use foam, carbon dioxide, dry powder or halon extinguishant. For large fires, use foam or water-fog; avoid use of water jet. Contain run-off water with, for example, temporary earth barriers. Control runoff.

**Fire Fighting Protective Equipment:**

A self contained breathing apparatus and suitable protective clothing should be worn in fire conditions.

---

#### 6. ACCIDENTAL RELEASE MEASURES:

Ensure suitable personal protection during removal of spillage. This means wearing a face mask that gives protection against organic dusts, eye protection, chemically resistant gloves, boots and coveralls. Cover spillage with damp sand, earth or any suitable adsorbent material. Transfer to a container for later disposal. If spill area is on ground near valuable plants or trees, remove top 5 cm of soil after initial clean up. Place soil in containers for disposal. Spillage or uncontrolled discharges into water courses must be alerted to the Department of Water Affairs/Environment.

|  |  |
|--|--|
| <b>MSDS : 032</b><br><b>Issued : April 2006</b><br><b>Revised: August 2008</b><br><b>Page : 3 of 8</b> |  |
|--|--|

---

## **7. HANDLING AND STORAGE:**

### **HANDLING:**

Read the label before use. Avoid contact with skin and eyes. When using do not eat, drink or smoke. Wash face and hands before eating, drinking or smoking.

### **STORAGE:**

Store under lock and key. Keep in original container, tightly sealed.  
Store in a cool, dry place away from sources of heat and naked flames.  
Store away from farm feeds and food stuff.

---

## **8. EXPOSURE CONTROL / PERSONAL PROTECTION:**

### **Engineering controls:**

Use only with adequate ventilation. In industrial situation, concentration values below the TWA value should be maintained. Values may be reduced by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods. If you believe airborne concentrations of mists, dusts or vapours are high you are advised to modify the process of environment to reduce the problem.

### **Personal protection:**

#### **Respiratory protection:**

Do not inhale dust. A face mask or respirator should be used when the product is being used.

#### **Protective gloves:**

Rubber, PVC or other protective gloves should be used other than for brief use. Failure to use gloves may result in skin irritation and symptoms ranging from redness and itching to blisters and even burns.

#### **Eye protection:**

Goggles or full face shield must be used when using this product. Failure to do so may result in eye damage if an accident occurs.

#### **Clothing:**

Wear long-sleeved shirt and long pants. Clean overalls should be worn, preferably with an apron. All skin areas must be covered.

#### **Safety boots:**

Wear safety boots with socks.

|  |  |
|--|--|
| <b>MSDS : 032</b><br><b>Issued : April 2006</b><br><b>Revised: August 2008</b><br><b>Page : 4 of 8</b> |  |
|--|--|

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES:

**Appearance** : free flowing powder  
**Color** : tan  
**Odor** : odourless  
**Density ( g/ml)** : 530 –680 kg/m<sup>3</sup>  
**Self ignition Temp** : 425°C  
**Solubility (g/l)** : dispersible  
**Corrosiveness** : not corrosive

---

## 10. STABILITY AND REACTIVITY:

### **Hazardous decomposition Product(s):**

Combustion or thermal decomposition will evolve toxic and irritant vapours.

Stable at normal temperatures and storage conditions.

---

## 11. TOXICOLOGY INFORMATION:

**Oral LD<sub>50</sub>:** > 5,000 mg/kg in rats.  
**Dermal LD<sub>50</sub> rabbits:** > 2,000 mg/kg,  
**Inhalation LC<sub>50</sub> : (4 hours):** 5 mg/l (rats).

**Skin irritation:** May cause mild skin irritation.

**Skin sensitization:** No skin sensitization has been observed in guinea pigs

**Eye irritation:** Moderate but reversible eye irritation has been seen in rabbits.

### **Reproductive Effects:**

Multigeneration studies in rats did not result in any reproductive effects at the highest doses tested of 250 mg/kg/day.

**Teratogenic Effects:** Metsulfuron-methyl did not cause developmental abnormalities to offspring of rats and rabbits fed 1000 mg/kg/day and 700 mg/kg/day respectively during gestation. These doses represent the highest dose tested for each experiment.

**Carcinogenic Effects:** Negative for rats and mice in laboratory tests, but studies may not have been at maximum tolerated dose .

**Mutagenic Effects:** The weight of evidence presented by a battery of tests to measure mutagenicity and other adverse effects on DNA indicates that metsulfuron-methyl is neither mutagenic nor genotoxic

|  |  |
|--|--|
| <b>MSDS : 032</b><br><b>Issued : April 2006</b><br><b>Revised: August 2008</b><br><b>Page : 5 of 8</b> |  |
|--|--|

---

## 12. ECOLOGICAL INFORMATION:

### **Birds:**

Metsulfuron-methyl has very low avian toxicity.  
Acute oral LD<sub>50</sub> for mallard ducks >2510 mg/kg

### **Fish:**

The chemical has very low toxicity to aquatic organisms.  
LC<sub>50</sub> (rainbow trout)(96 hours): 380 mg/l

### **Daphnia:**

LC<sub>50</sub> (48 H) >150 mg/l

**AlgaeEC<sub>50</sub>-72h:** 0,157 mg/l. Toxic to algae.

**Lemna gibba:** Toxic to Lemna 0,36 µg/l.

### **Bees:**

Metsulfuron-methyl has low acute toxicity to honey bees with a topical LD<sub>50</sub> of greater than 25 µg/bee

**Earth Worms:** > 1000 mg/kg.

### **Soil persistence:**

The breakdown of metsulfuron-methyl in soils is largely dependant on soil temperature, moisture content, and pH.

Half-life estimates for metsulfuron-methyl in soil are wide ranging from 14 - 180 days, with an overall average of reported values of 30 days.

### **Mobility:**

The chemical has a higher mobility potential in alkaline soils than in acidic soils, as it is more soluble under alkaline conditions.

### **Surface water:**

Metsulfuron-methyl is stable to photolysis, but will break down in ultraviolet light.

The chemical is stable to hydrolysis at neutral and alkaline pHs, and has a half-life of 3 weeks at pH 5.0

|  |  |
|--|--|
| <b>MSDS : 032</b><br><b>Issued : April 2006</b><br><b>Revised: August 2008</b><br><b>Page : 6 of 8</b> |  |
|--|--|

---

**13. DISPOSAL CONSIDERATIONS:**

Do not contaminate rivers, dams or any other water source with chemical or used containers.  
Drain and triple rinse containers and then destroy by perforation and flattening.  
Bury in an approved landfill site.  
Do not re-use containers for any other purpose.

---

**14. TRANSPORT INFORMATION:**

**UN NUMBER:** 3077

**ADR/IRD:**

Proper shipping name: Environmentally hazardous substance, solid, n.o.s.  
(Metsulfuron-methyl)

Class: 9  
Classification code: M 7  
Hazard ID: 90  
Packaging group: III

**IMG/IMO:**

Proper shipping name: Environmentally hazardous substance, solid, n.o.s.  
(Metsulfuron-methyl)

Class: 9  
Label: 9. Marine pollutant  
Packaging group: III

**AIR/IATA :**

Proper shipping name: Environmentally hazardous substance, solid, n.o.s.  
(Metsulfuron-methyl)

Class: 9  
  
Packaging group: III  
Passenger aircraft: Y911 (30Kg)  
Cargo aircraft: 900 (No limit)  
  
Tremcard No: 90GM7-III

|  |  |
|--|--|
| <b>MSDS : 032</b><br><b>Issued : April 2006</b><br><b>Revised: August 2008</b><br><b>Page : 7 of 8</b> |  |
|--|--|

---

## 15. REGULATORY INFORMATION:

**Hazard symbol:** N

**Indication of danger:** Dangerous to the environment.

**Risk phrases:**

**R36/37/38** Irritating to eyes, respiratory system and skin.

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

**Safety phrases:**

**S(1/2)** Keep locked up and out of reach of children.

**S3/7/9** Keep container tightly closed in a cool, well ventilated place.

**S20/21** When using do not eat, drink or smoke.

**S24/25** Avoid contact with skin and eyes.

**S60** This material and its container must be disposed of as hazardous waste.

**S61** Avoid release to the environment. Refer to special instructions/Safety data sheet

---

## 16. OTHER INFORMATION:

**References:**

- Similar product MSDS.
- The Pesticide Manual; Thirteenth Edition; Editor Clive Tomlin; Crop Protection Publications, 2003.
- ADR, Vol.1, applicable January 2005.
- Dangerous Goods Regulations; IATA International Air Transport Association, 46<sup>th</sup> Edition, Effective 1 January 2005.
- IMDG Code, Vol. 2, 2004 Edition.
- EXTOWNET, Pesticide Information Profiles, Revised June 1996. The primary files are maintained and archived at the Oregon State University.
- ECB-ESIS

**Read the label before use or buy.**

**Use pesticides safely.**

**The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process. All**

|  |  |
|--|--|
| <b>MSDS : 032</b><br><b>Issued : April 2006</b><br><b>Revised: August 2008</b><br><b>Page : 8 of 8</b> |  |
|--|--|

---

**OTHER INFORMATION (Contd.):**

**information is given in good faith but without guarantee in respect of accuracy, and no responsibility is accepted for errors or omissions or the consequence thereof.**

**Usage : A sulfonyl urea herbicide.**

**CLIMAX is the property of VOLCANO AGROSCIENCE (Pty) Ltd.**

---

**END OF DOCUMENT.**