

Preparation Date 06--Oct-2017

Revision Date 06-Oct-2017

Revision Number:1

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

Product Identifier

Product Description Glufosinate-ammonium 50% WG

Other means of Identification

UN-No 3077

Recommended use of the chemical and restriction on use

Recommended use Herbicide

Uses advised against Activities contrary to label recommendations

Details of the Supplier of the Safety Data Sheet

Supplier Address

UPL Limited
Uniphos House, Madhu Park,
Khar (W), Mumbai, India
Tel: +91-(022)- 2646-8000

E-mail address info.in@uniphos.com

Emergency Telephone Number

Company Phone Number +91-(022)- 2646-8000
Emergency telephone number +91-(022)-2646-8000 (Office Hours: 9:00 A.M. - 5:00 P.M.)

2. Hazard Identification

Classification

Reproductive toxicity	Category 1B -(H360)
STOT - repeated exposure	Category 2 - (H372)
Aquatic Acute Hazard	Category 2 - (H401)
Aquatic Chronic Hazard	Category 2 - (H411)

Label elements



Signal word

Danger

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Hazard Statements

H360 - May damage fertility or the unborn child

H372 - May cause damage to organs through prolonged or repeated exposure

H401 - Toxic to aquatic life

H402 - Toxic to aquatic life with long lasting effects

Precautionary Statements

Prevention

P201 Obtain special instruction before use.

P202 Do not handle until all safety precautions have been read and understood.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P273 Avoid release to the environment.

Response

P308+P313 IF exposed or concerned: Get medical advice/attention.

P314 Get medical advice/attention if you feel unwell.

P391 Collect Spillage.

Storage

P405 Store locked up.

P403+P235 Store in a well-ventilated place. Keep cool

Disposal

P501 Dispose of contents/container to an approved waste disposal plant.

Other Information

No other hazards known.

3. Composition/information on Ingredients

Chemical name	CAS-No	Weight %
Glufosinate-ammonium	77182-82-2	50

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret.

4. First aid measures

First-aid measures

Eye contact

Hold eye open and rinse slowly and gently with water for 15 - 20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. If eye irritation persists, get medical attention.

Skin contact

Remove contaminated clothing and shoes immediately, then wash with plenty of water. Clean contaminated clothing and shoes before re-use or discard if they cannot be thoroughly cleaned. If skin irritation or rash develops, get medical attention.

Ingestion

Rinse mouth. Never give anything by mouth to an unconscious person. Do not induce vomiting unless told by physician. If vomiting occurs ensure patient can breathe. Get medical attention, if you feel unwell.

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Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Give artificial respiration if victim is not breathing. If signs/symptoms continue, get medical attention.

Most Important Symptoms and Effects, Both Acute and Delayed

Most Important Symptoms and Effects The most important known symptoms and effects are described in the labelling (See section 2) and/or in section 11.

Indication of immediate medical attention and special treatment needed

Notes to physician Treat symptomatically and supportively.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media CO₂, Dry chemical. Water spray or fog

Unsuitable extinguishing media Do not use a solid water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture

Special Hazard Thermal decomposition can lead to release of toxic/irritant gases and vapor.

Hazardous combustion products Carbon oxides, oxides of nitrogen and phosphorous compounds.

Protective equipment and precautions for firefighters

Wear self-contained breathing apparatus and protective suit. Use standard firefighting procedures and consider the hazards of involved material.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal Precautions Avoid dust formation. Evacuate personnel to safe areas. Ensure adequate ventilation. Remove all sources of ignition. Wear respiratory protection. Do not eat, drink or smoke while using this product. Avoid contact with skin and eyes. Do not breathe dust/mist

Environmental precautions Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. See Section 12 for additional ecological information. Avoid release to the environment. Collect spillage.

Methods and material for containment and cleaning up

Methods for Clean-Up Sweep up or vacuum up spillage and collect in suitable container for disposal. Remove all sources of ignition.

Reference to other sections Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

7. Handling and Storage

Precautions for safe handling

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Handling

Do not breathe dust/fume/gas/mist/vapours/spray. Ensure adequate ventilation. Wash thoroughly after handling. Empty containers may contain hazardous residues. Keep away from sources of ignition.

Conditions for safe storage, including any incompatibilities**Storage**

Store in original container. Keep containers tightly closed in a cool, well-ventilated place. Store locked up. Do not store material near food, feed or drinking water.

incompatible materials

Avoid acidic and alkaline condition. Avoid direct exposure to sunlight.

8. Exposure Controls/Personal Protection

Exposure Guideline

Apply technical measures to comply with the occupational exposure limit.

Engineering controls

Ensure adequate ventilation, especially in confined areas. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal protective equipment**Eye/Face Protection**

Avoid contact with eyes. Where there is potential for eye contact make sure eyewash facility is in vicinity. Tightly fitting safety goggles. Face-shield.

Skin/Hand protection

Long-sleeved clothing. Preventative skin protection is recommended. Wear suitable protective glove/clothing. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Respiratory protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Environmental exposure controls

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided. Local authorities should be advised if significant spillage cannot be contained.

General hygiene considerations

Do not eat, drink or smoke when using this product. Keep away from food, drink and animal feeding stuffs. Wash hands before breaks and immediately after handling the product. Remove and wash contaminated clothing before re-use.

9. Physical and Chemical Properties

Information on basic physical and chemical properties**Appearance**

Odourless cream powder

Physical state

Solid

Odor

Odourless

Color

cream

odor threshold

No information available.

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<u>Property</u>	<u>VALUES</u>	<u>Remarks/ Method</u>
pH	6-7 @ 20°C	1% (w/v) aqueous solution
Melting point/freezing point	No information available	
Boiling Point/Range	No information available	
Flash Point	Not applicable	
flammability (solid, gas)	Non-flammable	
Upper/lower flammability or	No information available	
Explosive limit	No information available	
Specific gravity	No information available	
Density	0.625 - 0.675 g/ml	
Vapor density	No information available	
Vapor pressure	No information available	
Water solubility	Soluble	
Solubility in Other Solvents	Immiscible with acetone & methanol	
Partition coefficient: n-octanol/water	No information available	
Autoignition temperature	No information available	
decomposition temperature	No information available	
Viscosity, kinematics	No information available	
Dynamic viscosity	No information available	
Oxidizing properties	Non-oxidizing	
Explosive properties	Non-explosive	

OTHER INFORMATION

Surface tension	37.87 ± 0.4 mN/m
Softening point	No information available
Dust-content	Dust free

10. Stability and Reactivity

Reactivity

Stable under normal temperatures and pressures.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reaction

Hazardous polymerization does not occur.

Conditions to avoid

Heat, flames and sparks. Avoid direct exposure to sunlight.

Incompatible Materials

Avoid acidic and alkaline condition.

Hazardous decomposition products

Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition.

Hazardous decomposition products formed under fire conditions:

Oxides of carbon, Oxides of nitrogen, Phosphorus compounds

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11. Toxicological Information

Information on Toxicological Effects

LD50 Oral = >2000 mg/kg

LD50 Dermal = >2000 mg/kg

LC50 Inhalation= >5.243 mg/L (maximum breathing zone concentration - No mortality)

Local effect

Inhalation	Based on available data, the classification criteria are not met.
Eye contact	non-irritating
Skin contact	Non-irritating
Ingestion	May be harmful if swallowed

Chronic toxicity

Skin Corrosion/Irritation	non-irritating
Eye damage/irritation	non-irritating
sensitization	Based on available data, the classification criteria are not met.
Mutagenic effects	Based on available data, the classification criteria are not met.
Carcinogenic effects	There are no known carcinogenic chemicals in this product.
Reproductive effects	May damage fertility or the unborn child
STOT - Single Exposure	Based on available data, the classification criteria are not met.
STOT - repeated exposure	May cause damage to organs through prolonged or repeated exposure
Aspiration hazard	Based on available data, the classification criteria are not met.

12. Ecological Information

Ecotoxicity

Toxic to aquatic life with long lasting effects.

LC50/Fish/96hr = 5.5 mg/l (rainbow trout)

ErC50/Algae/72hr = 6.86 mg/l (Pseudokirchneriella subcapitata)

EC50/Daphnia Magna/48hr = 2.0 mg/l

Persistence and Degradability

Glufosinate-ammonium: The substance is not significantly degraded by hydrolysis and photolysis. Glufosinate-ammonium is moderately biodegraded in soil under aerobic conditions with sensitivity concentration. The biodegradation occurs less readily in soils and anaerobic conditions in bodies of water under aerobic conditions, this appears insignificantly anaerobically (US EPA 2008)

Bioaccumulative Potential

Glufosinate-ammonium: The estimated BCF of 3.2 suggests that potential for bioconcentration in aquatic organism is low. (HSDB 2010)

Other Adverse Effects

No information available.

13. Disposal Considerations

Waste Treatment Methods



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Waste Disposal Method Dispose of in accordance with all applicable federal, state, and local laws and regulations.

Contaminated packaging Discharge, treatment, or disposal may be subject to national, state, or local laws.

14. Transport Information

IMDG/IMO

14.1 UN-No	UN 3077
14.2 Proper Shipping name	Environmentally hazardous substance, solid, n.o.s.(Glufosinate-ammonium)
14.3 Hazard class	9
14.4 Packing group	III
14.5 EMS-No	F-A,S-F
14.6 Environmental Hazard	Marine pollutant

IATA/ICAO

14.1 UN-No	UN 3077
14.2 Proper Shipping name	Environmentally hazardous substance, solid, n.o.s.(Glufosinate-ammonium)
14.3 Hazard class	9
14.4 Packing group	III
14.6 Environmental Hazard	Yes

15. Regulatory Information

International Inventories

(Glufosinate-ammonium: CAS 77182-82-2)

USINV	Complies
TSCA	-
EINECS/ELINCS	Complies
DSL/NDSL	-
PICCS	-
ENCS	-
IENCS	-
AICS	-
KECL	-

- : Not listed/Exempted

Legend

USINV - Total TSCA/FIFRA Inventory

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

ENCS - Japan Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

16. Other Information

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Revision Summary	Update to GHS format



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End of Safety Data Sheet