



YONGNONG

# Material Safety Data Sheet

Glufosinate-Ammonium 95% TC

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product name** : Glufosinate-ammonium 95% TC

**Company Identification:**

Yongnong Biosciences Co., Ltd., No.3, Weiqi Rd (East), Hangzhou Gulf Fine Chemical Zone, Shangyu, Zhejiang, China

Telephone : 86-575- 82728875

Fax : 86-575-82729696

P. C. : 312369

Emergency Phone : 86-800-8575300

**Product Use** : Herbicide

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

**Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]**

Acute toxicity, Oral (Category 4)

Reproductive toxicity (Category 1B)

Acute toxicity, Dermal (Category 4)

Acute toxicity, Inhalation (Category 4)

Specific target organ toxicity - repeated exposure (Category 2)

**Classification according to EU Directives 67/548/EEC or 1999/45/EC**

Harmful by inhalation, in contact with skin and if swallowed. Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed. May impair fertility. Possible risk of harm to the unborn child.

### 2.2 Label elements

**Labelling according Regulation (EC) No 1272/2008 [CLP]**

Pictogram



Signal word Danger

Hazard statement(s)

H302 Harmful if swallowed.

H312 Harmful in contact with skin.

H332 Harmful if inhaled.

H360Fd May damage fertility. Suspected of damaging the unborn child.

H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statement(s)

P201 Obtain special instructions before use.

P280 Wear protective gloves/ protective clothing.

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

Supplemental Hazard

Statements none

Restricted to professional users.

**According to European Directive 67/548/EEC as amended.**

Hazard symbol(s)



R-phrase(s)

- R60 May impair fertility.  
 R20/21/22 Also harmful by inhalation, in contact with skin and if swallowed.  
 R48/20/22 Also harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.  
 R63 Possible risk of harm to the unborn child.

S-phrase(s)

- S53 Avoid exposure - obtain special instructions before use.  
 S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Restricted to professional users.

**2.3 Other hazards - none**

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical name	CAS Number	Concentration (% , w/w)
Glufosinate-ammonium	77182-82-2	95 min.
Inert Ingredients		5 max.

**4. FIRST AID MEASURES**

**4.1 Description of first aid measures**

**General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance.

**If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**

Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**

Flush eyes with water as a precaution.

**If swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

no data available



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

no data available

**5. FIRE-FIGHTING MEASURES**

**5.1 Extinguishing media**

**Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**5.2 Special hazards arising from the substance or mixture**

Carbon oxides, nitrogen oxides (NO<sub>x</sub>), Oxides of phosphorus

**5.3 Advice for firefighters**

Wear self contained breathing apparatus for fire fighting if necessary.

**5.4 Further information**

no data available

**6. ACCIDENTAL RELEASE MEASURES**

**6.1 Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

**6.2 Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

**6.3 Methods and materials for containment and cleaning up**

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

**7. HANDLING AND STORAGE**

**7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed.

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

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

**8. EXPOSURE CONTROL/PERSONAL PROTECTION**

**8.1 Components with workplace control parameters**

No data available

**8.2 Appropriate engineering controls**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**8.3 Personal protective equipment**

**Eye/face protection**

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

### Skin protection

Complete suit protecting against chemicals. Handle with gloves. Gloves must be inspected prior to use. 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. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

## 9. PHYSICAL AND CHEMICAL PROPERTIES

a) Melting point	Melting point/range: 213.8 °C
b) Partition coefficient (N-octanol/water)	log Kow= $\leq$ -4.26 (19.9°C, pH 4.31)
c) solubility	1335.95g/L in water (20°C, pH 4.83) 0.15g/L in acetone (20°C, pH 4.83) 4.52g/L in methanol (20°C, pH 4.83)
d) Vapour pressure	0.039 mPa or $2.89 \times 10^{-7}$ mmHg (25°C)
e) Appearance	off-white odourless powder solid
f) Dissociation constant	pKa=3.9
g) Explodability	non-explosive
h) Flammability	not highly flammable(non-flammable)
i) Hydrolysis characteristic	Hydrolytically stable at pH 4, 7, 9
j) pH value	$3.78 \pm 0.02$ (21.5°C)
k) Photolysis characteristic	stable to light
l) density/Specific gravity	$1.4044 \pm 0.0283$ (20°C)
m) Stability	stable with and without metals metals and metal ions at normal and evaluated temperature(i.e. $54 \pm 2^\circ\text{C}$ )
n) Accelerated storage stability	stable
o) corrosion characteristics	non-corrosive
p) Thermal and air stability	stable at room temperature
q) Henry constant	$4.48 \times 10^{-9}$ Pa m <sup>3</sup> mol <sup>-1</sup> (calc.)

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

Stable to light, and at least 2 years in unsealed package under normal storage condition.



**10.3 Possibility of hazardous reactions**

no data available

**10.4 Conditions to avoid**

Avoid extreme heat.

**10.5 Incompatible materials**

Strong oxidizing agents

**10.6 Hazardous decomposition products**

Other decomposition products - no data available

**10.7 Further information**

Compatible with diuron, simazine, MCPA, and some other herbicides.

**11. TOXICOLOGICAL INFORMATION**

**Acute toxicity**

Oral--- Acute oral LD<sub>50</sub> for female rats 2000 mg/kg

Inhalation ---LC<sub>50</sub>(4 h) for rattus norvegicus 8.48 mg/m<sup>3</sup>

Dermal ---LD<sub>50</sub> for female and male rats > 2000 mg/kg

**Dermal corrosion/irritation**

Skin - rabbit - No skin irritation

**Serious eye damage/eye irritation**

Eyes - rabbit - No eye irritation

**Respiratory or skin sensitization**

No skin sensitization in guinea pigs

**Germ cell mutagenicity**

No mutagenic activity was detected in a battery of mutagenicity tests.

**Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**Reproductive toxicity**

No data available

**Neurotoxicity:** Does not inhibit acetylcholinesterase activities. No evidence of delayed neurotoxicity was noted in hens. Neurobehavioral effects (e.g., hypersensitivity, tremors, convulsions) related to stimulation of the central nervous system (CNS) were observed in some studies but only at lethal or near lethal dose levels.

**Specific target organ toxicity - single exposure**

no data available

**Specific target organ toxicity - repeated exposure**

May cause damage to organs through prolonged or repeated exposure.

**Aspiration hazard**

no data available

**Information on the likely routes of exposure**

Inhalation: Harmful if inhaled. May cause respiratory tract irritation.

Ingestion: Harmful if swallowed.

Skin: Harmful in contact with skin.

## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

**Birds** Dietary LC<sub>50</sub> (8 d) for Japanese quail >5000 mg/kg.

**Fish** LC<sub>50</sub> (96 h) for rainbow trout 710, carp, bluegill sunfish, golden orfe >1000 mg/l.

**Daphnia** LC<sub>50</sub> (48 h) 560-1000 mg/l.

**Algae** LD<sub>50</sub> for *Scenedesmus subspicatus* ≥1000, *Selenastrum capricornutum* 37 mg/l.

**Bees** Not hazardous to bees; LD<sub>50</sub> >100 µg/bee.

**Worms** LD<sub>50</sub> for earthworms >1000 mg/kg soil.

**Other beneficial spp.** Not toxic to beneficial arthropods.

### 12.2 Persistence and degradability

Rapidly degraded in surface levels of soil, and in water.

### 12.3 Bioaccumulative potential

no data available

### 12.4 Mobility in soil

no data available

### 12.5 Other adverse effects

no data available

## 13. DISPOSAL CONSIDERATIONS

### Waste treatment methods

#### Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

#### Contaminated packaging

Empty containers should be triple rinsed (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or if allowed by Authorities, by burning. If burned, stay out of smoke.

## 14. TRANSPORT INFORMATION

### 14.1 UN number

ADR/RID: -

IMDG: -

IATA: -

### 14.2 UN proper shipping name

ADR/RID: Not dangerous goods

IMDG: Not dangerous goods

IATA: Not dangerous goods

### 14.3 Transport hazard class(es)

ADR/RID: -

IMDG: -

IATA: -



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**14.4 Packaging group**

ADR/RID: -

IMDG: -

IATA: -

**14.5 Environmental hazards**

ADR/RID: no

IMDG: no

IATA: no

**14.6 Special precautions for user**

No data available

**15. REGULATORY INFORMATION**

This safety datasheet complies with the requirements of GHS(third revised edition).

Local regulations, if any should be applied to classification and labeling.

**16. OTHER INFORMATION**

This information is provided in good faith but without express or implied warranty. Buyer assumes all responsibility for safety and use not in accordance with label instruction.