



# JINGMA CHEMICALS LTD.

Address: 26<sup>th</sup>&27<sup>th</sup> Floor, Golden Plaza, No.118, Qingchun Road Hangzhou,Zhejiang, China

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## Material Safety Data Sheet

### Glyphosate 360 SL

Version ... / D Revision Date: May 14, 2012

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

### Product information

Name: Glyphosate (480 g/L isopropylamine salt of glyphosate equivalent to 360 g/L glyphosate acid)  
Assay: 480 g/L (41%W/W)  
Company: JINGMA CHEMICALS LTD.  
Telephone: 0086-0571-87248111  
Telefax: 0086-0571-87248222

Responsible Department Material and Transport Safety Management: Not applicable.

Emergency telephone number: Not applicable.

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

### Chemical nature

Technical material (TC): Glyphosate-isopropylammonium  
Formula:  $C_6H_{17}N_2O_5P$   
CAS-No.: 38641-94-0  
EINECS-No.: 254-056-8  
UN No. : 3082  
CIPAC No. : 284

## 3. HAZARDS IDENTIFICATION

### Emergency overview

**Irritating to eyes. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.**

### Potential health effects



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<i>Inhalation:</i>	No adverse respiratory effects are anticipated.
<i>Ingestion:</i>	May cause gastrointestinal discomfort, nausea, vomiting and diarrhea. If ingested large quantities of the undiluted product may result in hypotension and pulmonary oedema.
<i>Skin contact:</i>	Cause irritation
<i>Eye contact:</i>	Causes substantial, but temporary eye injury.
<i>Cancer information:</i>	Chronic feeding studies with glyphosate in mice and rats indicated no treatment related effects or any evidence of carcinogenicity in laboratory animals. The no effect levels in rats and mice were greater than 20,000 mg/kg and greater than 30,000 mg/kg in the diet, respectively.
<i>Teratology:</i>	Glyphosate did not cause embryotoxicity, fetotoxicity, or any other teratogenic effects in animal studies. The no effect levels in rabbits and rats were 175 mg/kg and 1,000 mg/kg body weight, respectively.
<i>Reproductive effects:</i>	Glyphosate did not interfere with fertility in animal reproduction studies. The no effect level in a three-generation rat reproduction study was greater than 30 mg/kg body weight.

## 4. FIRST AID MEASURES

**General advice: If poisoning occurs, immediately contact a doctor or Poisons Information Centre, and follow the advice given. Show this Material Safety Data Sheet to the doctor.**

<b>Inhalation:</b>	Remove to fresh air, keep warm and at rest. Give artificial respiration or oxygen if breathing is shallow or stopped. Get medical attention immediately...
<b>Skin contact:</b>	Remove contaminated clothing and wash affected areas or skin with soap and water. Seek medical advice if irritation develops.
<b>Eye contact:</b>	Hold the eyes and flush immediately with plenty of water. Seek medical advice if irritation develops.
<b>Ingestion:</b>	Rinse mouth with water. Give plenty of water to drink. Do NOT induce vomiting. Seek medical assistance.
<b>Notes to physician:</b>	Treatment is symptomatic.

## 5. FIRE-FIGHTING MEASURES



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<b>Extinguishing media:</b>	Extinguish fire with foam, dry powder, carbon dioxide or water spray.
<b>Hazard from combustion products:</b>	None known
<b>Fire-fighting instructions:</b>	Self-contained breathing apparatus. Equipment should be thoroughly decontaminated after use.
<b>Unusual fire and explosion hazards:</b>	Not a fire or explosion hazard
<b>Hazardous reactions:</b>	DO NOT mix, store or apply the product or spray solutions of the product in galvanized steel or unlined steel (except stainless steel) containers or spray tanks. The product or spray solutions of the product react with such containers and tanks to produce hydrogen gas which may form a highly combustible gas mixture that can flash or explode if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source. Spray solutions of the product should be mixed, stored and applied only in stainless steel, aluminum, fiberglass, plastic and plastic-lined steel containers.

## 6. ACCIDENTAL RELEASE MEASURES

<b>Personal precaution:</b>	Engineering controls: Have eye wash facilities immediately available at locations where eye contact can occur. <b>See section 8</b>
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<b>Environment precaution:</b>	<b>SMALL QUANTITIES:</b> Low environmental hazard. <b>LARGE QUANTITIES:</b> Minimize spread. Keep out of drains, sewers, ditches and water ways. Notify authorities.
<b>Methods for cleaning up:</b>	<b>SMALL QUANTITIES:</b> Flush spill area with water. <b>LARGE QUANTITIES:</b> Absorb in earth, sand or absorbent material. Dig up heavily contaminated soil. Collect in containers for disposal. Refer to section 7 for types of containers. Flush residues with small quantities of water. Minimize use of water to prevent environmental contamination.

## 7. HANDLING AND STORAGE

<b>Handling:</b>	Avoid contact with eyes. When using do not eat, drink or smoke. Wash hands thoroughly after handling or contact. Thoroughly clean equipment after use. Do not contaminate drains, sewers and water ways when disposing of equipment rinse water. Emptied containers retain vapor and product residue. FOLLOW LABELLED WARNINGS EVEN AFTER CONTAINER IS EMPTIED.
<b>Storage:</b>	Compatible materials for storage: stainless steel, aluminum, fiberglass, plastic, glass lining Incompatible materials for storage: galvanized steel, unlined mild steel, see section 10. Keep out of reach of children. Keep away from food, drink and animal feed. Keep only in the original container. Partial crystallization may occur on prolonged storage below the minimum storage temperature. If frozen, place in warm room and shake frequently to put back into solution. Minimum shelf life: 5 years. Store in the closed, original container in a well-ventilated area. Do not store for prolonged periods



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in direct sunlight.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure Standards:** None established for formulated product or its components

**Engineering Controls:** Well ventilated

**Respiratory:**

No special requirement when used as recommended.

**Personal Protection:** Avoid contact with eyes and skin. Do not inhale spray mist. When preparing spray solution, wear PVC/rubber apron or cotton overalls buttoned to the neck and wrist, elbow-length PVC gloves and goggles or face-shield. After use and before eating, drinking and smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves, face and contaminated clothing.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Amber – Brown Liquid

**Safety data**

**Molecular formula:** C<sub>6</sub>H<sub>17</sub>N<sub>2</sub>O<sub>5</sub>P

**Molecular weight:** 228.2

**Melting point:** Occurs in 2 steps ,143-164°C and 189-223°C

**Flash point:** Does not flash.

**Auto ignition temperature:** 443 °C

**Vapour pressure:** 2.1x 10<sup>-3</sup>mPa (20°C).

**Solubility:** In water 1050g/l, (25°C, pH4.3)  
in dichloromethane 0.184,  
methanol 15.88g/l(20°C)

**Chemical stability:** Glyphosate and all its salts are non-volatile, do not photochemically degrade and are stable in air

## 10. STABILITY AND REACTIVITY

**Stability:** Stable under normal conditions of handling and storage.



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<b>Hazardous decomposition products:</b>	Thermal decomposition: Hazardous products of combustion: see section 5.
<b>Materials to avoid/Reactivity:</b>	Reacts with galvanized steel or unlined mild steel to produce hydrogen, a highly flammable gas that could explode.

## 11. TOXICOLOGICAL INFORMATION

**Acute oral toxicity LD50 (rat):** 5,600 mg/kg body weight

**Acute dermal toxicity LD50 (rat):** >5000 mg/kg. No mortality

**Acute Inhalation toxicity:** LC<sub>50</sub> rat (4 hour): >5.7 mg/L air.  
Aerosol particle size (< 10 micron) much lower than the droplet size (> 100 micron) normally achieved during spraying operations. Maximum attainable concentration. No mortality.

**Skin irritation ( Rabbit, 6 animals, OECD 404 test ):** Redness, mean EU score: 0.64  
Swelling, mean EU score: 0.03  
Days to heal: 3

**Skin sensitization:** **Guinea pig, 9-induction Buehler test:**  
Positive incidence: 0 %

**Eye irritation:** **Rabbit, 6 animals, OECD 405 test:**  
Conjunctiva redness, mean EU score: 1.94  
Conjunctiva swelling, mean EU score: 1.89  
Corneal opacity, mean EU score: 0.47  
Iris lesions, mean EU score: 0.69  
Days to heal: > 21  
Other effects: pannus, tissue destruction in eye (necrosis of conjunctivae)

## 12. ECOLOGICAL INFORMATION

This section is intended for use by eco-toxicologists and other environmental specialists.

Data obtained on product and components are summarized below.



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<b>Eco-toxicity:</b>	<i>Fish toxicity:</i>	LC <sub>50</sub> (96 h) trout ( <i>Oncorhynchus mykiss</i> ) 8.2 mg/L. LC <sub>50</sub> (96 h) sunfish ( <i>Lepomis macrochirus</i> ) 5.8 mg/L.
	<i>invertebrates:</i>	EC <sub>50</sub> ( 48 h) water flea( <i>Daphnia magna</i> ) 11 mg/L.
	<i>Algal toxicity:</i>	EC <sub>50</sub> ( 72 h) <i>Selenastrum capricornutum</i> (growth rate): 8.0 mg/L EC <sub>50</sub> (7day) Duckweed: > 6 mg/L
	<i>Arthropod toxicity</i>	LD <sub>50</sub> (48 hr) Honey bee - > 0.1mg/bee LC <sub>50</sub> (14 days) Earthworm - > 5,000 mg/kg of dry soil.
	<i>Bird toxicity:</i>	Dietary LC <sub>50</sub> (5 day) bobwhite quail 5,620 mg/kg diet.
<b>Environmental fate, persistence and degradability, mobility:</b>		Soil, field (half life) - 2 to 174 days Koc - 884 to 60,000 l/kg Water, aerobic (half life) - < 7 days

## 13. SPILLS AND DISPOSAL

Dispose of as hazardous industrial waster. Burn in special, controlled high temperature incinerator. Ensure suitable personal protection (including respiratory protection) during removal of spillage. Contain spill and absorb with sand or other absorbent material. Do not allow to enter drains, sewers and watercourses. Collect in sealed open top container for disposal. Triple rinse containers, add rinsate to spray tanks and send containers for recycling or if not recycling, break, crush or puncture and bury empty containers in a local authority landfill or in accordance with local, state or federal regulation. Do not dispose of undiluted chemicals on site.

## 14. TRANSPORT INFORMATION

The data provided in this section is for information only. Please apply the appropriate regulations to properly classify your shipment for transportation.

### ADR/RID

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.,  
(glyphosate, ethoxylated tallowamine)

UN NO.: UN3082

Class:9

Kemler:90

Packing Group III

### IMO

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ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S, (glyphosate, ethoxylated tallowamine)

UN NO.: UN3082

Class:9

Kemler:90

Packing Group III

## **IATA/ICAO**

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (glyphosate, ethoxylated tallowamine)

UN NO.: UN3082

Class:9

Kemler:90

Packing Group III

## **15. REGULATORY INFORMATION**

### **TSCA Inventory**

All components are on the US EPA's TSCA Inventory

### **SARA Title III Rules**

Section 311/312 Hazard Categories

Not applicable.

Section 302 Extremely Hazardous Substances

Not applicable.

Section 313 Toxic Chemical(s)

Not applicable.

### **CERCLA Reportable quantity**

Not applicable.

## **16.OTHER INFORMATION**

This MSDS summarizes our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products. If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company. Our responsibility for products sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available on request.