興農股份有限公司
SINON CORPORATION

SAFETY DATA SHEET
Glyphosate IPA 480 g/l SL

Sinon Corporation SDS Data Bank No. AHF02-48SL11

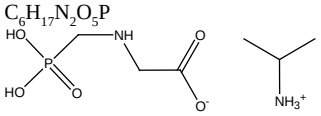
Issue Date: Apr. 01, 2005 Revised Date: July. 11, 2018 Version: 11

According to ST/SG/AC.10/30/Rev.6 GHS of Classification and Labelling of Chemicals

1. IDENTIFICATION OF PRODUCT AND MANUFACTURER

1.1. Identification:

Product name : Glyphosate IPA salt 480 g/l SL
Common name : Glyphosate-isopropylammonium
Chemical name : *N*-(Phosphonomethyl)glycine IPA salt
Empirical formula : $C_6H_{17}N_2O_5P$
Structural formula :



Molecular weight : 228.2

1.2. Uses:

Herbicide

1.3. Manufacturer:

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1F, No. 101, Nanrong Road, Dadu District, Taichung City 43245, Taiwan.
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Location of plant
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Tel: 886-4-26933841 Fax: 886-4-26933713

1.4. Emergency Telephone:

Tel: 886-4-26934261

2. HAZARDS IDENTIFICATION

2.1. Classification:

Acute oral toxicity	Category 4
Eye irritation	Category 2B

2.2. Labelling:

2.3. Signal words:

Warning

2.4. Hazard statement:

H302 Harmful if swallowed
H320 Cause eye irritation

2.5. Precautionary Statement Prevention:

P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

2.6. Precautionary Statement Response:

P310 Immediately call a POISON CENTER or doctor/physician.
P330 Rinse mouth.
P301+P312 IF SWALLOWED: call a POISON CENTER or doctor/physician IF you feel unwell.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 If eye irritation persists: Get medical advice/attention.

2.7. Precautionary Statement Disposal:

P501 Dispose of contents/container in accordance with local / national regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS No.	Percentage
Glyphosate IPA salt	38641-94-0	48% min.

4. FIRST AID MEASURE

4.1. First Aid:

Ingestion : Induce vomiting, but only if the patient is conscious. Call a physician. This product will cause gastrointestinal tract irritation. Immediately dilute by swallowing water or milk. Never give anything by mouth to an unconscious person. Remove by gastric lavage and catharsis. Maintain blood pressure and airway. Give oxygen if respiration is depressed. Do not perform gastric lavage if victim is unconscious. Get medical attention immediately (Dreisbach, Handbook of Poisoning, 12th Ed.). Administration of lavage or oxygen should be performed by qualified medical personnel.

Inhalation : Remove from exposure area to fresh air immediately. Perform artificial respiration if necessary. Keep person warm and at rest. Treat symptomatically and supportively. Get medical attention immediately.

Eyes contact : Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains (at least 15-20 minutes).

Skin contact : Remove contaminated clothing and shoes immediately. Wash with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15-20 minutes).

4.2. Advices to Medical Treatment:

The typical symptoms were erosion of the gastrointestinal tract, seen as sore throat, dysphasia and gastrointestinal hemorrhage.

4.3. Antidote:

There is no specific antidote.

5. FIRE FIGHTING MEASURE

5.1. Extinguishing Media:

Water spray, foam, dry chemical carbon dioxide or Class B extinguish agent.

5.2. Fire Fighting Instructions:

Firefighter or other exposed to vapors or products of combustion should wear full protective clothing and self-contained breathing apparatus. Fire fighting equipment should be thoroughly cleaned after use.

5.3. Special Protective Equipment for Fire-fighters:

Use personal protection recommended in section 8.

5.4. Hazardous Heating Decomposed Products:

Carbon monoxide, phosphorus oxides, nitrogen oxides.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions:

Use personal protection recommended in section 8.

6.2. Environmental Precautions:

Low environmental hazard. Keep out of drains, sewers, ditches and water ways.
Also refer to section 13 for disposal of spilled material

6.3. Methods for Cleaning Up:

In Case of Spill or Leak: Control the spill at its source. Contain the

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spill to prevent it from spreading, contaminating soil, or entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Section 8. If a liquid, cover entire spill with absorbing material and place into compatible disposal container. Scrub area with a hard water detergent. Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposal.

7. HANDLING AND STORAGE

7.1. Handling:

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.
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7.2. Storage:

Do not contaminate water, foodstuffs, feed or seed by storage. This product should be stored, mixed or applied using only stainless steel, fiberglass plastic or plastic-lined containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure Limits:

No specific occupational exposure limit has been established.

8.2. Occupational Exposure Controls:

Respiratory protection : This herbicide is not likely to present an airborne exposure concern during normal handling. In the event of an accidental discharge of the material during manufacture or handling which produces a heavy vapor or mist, workers should use approved equipment. In work situations where an air purifying respirator is appropriate to be used, use of a full face respirator equipped with purifying elements for protection against organic vapor and dust/mist approved for pesticides is recommended.

Hand protection : This chemical should be handled only in a hood. Eye shields should be worn. Use appropriate OSHA/MSHA approved safety equipment. Avoid contact with skin, eyes and clothing. Keep tightly closed in a cool dry place. Store only with compatible chemicals.

Skin protection : Wear appropriate protective clothing to prevent skin contact. Applicators and other handlers must wear long-sleeved shirt, long pants, shoes plus socks and protective eyewear. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

Eye protection : Wear chemical splash goggles during mixing/pouring operations or other activity in which eye contact with undiluted glyphosate is likely to occur.

8.3. Environmental Exposure Controls:

No special ventilation is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Yellowish clear liquid
Odor : Characteristic
Boiling Point : 106°C
Melting Point : Not applicable
Vapor Pressure : 1.31 x 10^{-2} mPa (25°C) (Tech.)
Density : Approx. 1.17
pH : 4.5-5.0
Volatility : Not available
Solubility : In water 1050 g/l (25°C , pH 4.3)
Insoluble in common organic solvents, e.g. acetone, ethanol and xylene. The alkali-metal and amine salts are readily soluble in water (Tech.)
Evaporation Rate : < 2.1 x 10^{-7} Pa m^3 mol^{-1} (Tech.)
Log P_{ow} : < -3.2 (pH 2-5, 20°C) (Tech.)
Flammability : Non-flammable, No flash point
Explosive Properties : Non-explosive
Oxidizing Properties : Non-oxidizing properties

10. STABILITY AND REACTIVITY

10.1. Stability:

Stable for at least 2 years under normal conditions of warehouse storage.

10.2. Conditions to Avoid:

Not available

10.3. Materials to Avoid:

Corrosive to iron, galvanized steel and aluminum. Mixing with other herbicides may reduce the activity of glyphosate.

10.4. Hazardous Polymerization:

Will not occur.

11. TOXICOLOGICAL INFORMATION

11.1. Acute Toxicity:

Acute oral : LD_{50} > 2,000 mg/kg for rat
Acute dermal : LD_{50} > 4,000 mg/kg for rat
Eye irritation : Irritating for rabbit
Skin irritation : Not irritating for rabbit
Acute inhalation : LC_{50} > 25 mg/L
Skin sensitization : Not a sensitizer in guinea pigs

11.2. Chronic Toxicity:

Oral rats (2 years) 300 mg/kg diet caused no adverse effects. Beagle dogs received technical glyphosate in gelatin capsules at dose levels of 0, 20, 100 or 500 mg/kg body weight per day for 52 weeks. No effect occurred with respect to clinical signs, body weight, feed consumption, ophthalimoscopy, hematology, blood biochemistry, urinalysis, gross pathology and histopathology. The only changes in treated groups relative to controls were increased pituitary weights (absolute and relative) in the medium- and high-dose males. The NOEAL in this study was 500 mg/kg body weight per day.

11.3. Mutagenic Toxicity:

Ames test, *Salmonella typhimurium* TA 98, TA100, TA1535 with and without metabolic activation negative.
The compound does not cause mutations in microbes. The tests on eight different kinds of bacterial strains and on yeast cells were all negative. The compound poses little mutagenic risk to humans.

12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity:

Bird toxicity : LD_{50} > 2,000 mg/kg for Northern Bobwhite
Fish toxicity : LC_{50} (96 h) for rainbow trout was 29.31 mg/L.
Daphnia toxicity : LC_{50} (48 h) 76.17 mg/l.
Alga toxicity : EC_{50} (72 h) for *Selenastrum capricomutum* 3.45 mg/l.
Bee toxicity : Oral and dermal LD_{50} > 200 µg/bee.
Toxic to other organisms : The LC_{50} > 1000 mg/kg for earthworm (*Eisenia foetida*).

12.2. Mobility

Glyphosate is immobile or slightly mobile in many soils.

12.3. Persistence and Degradability:

Readily biodegradable: No.
DT_{50} water: 1 and 4 days
DT_{50} whole system: 27 and 146 days, 31 and 124 days. Mineralization 18 and 24 % after 100 days, 6 and 26 % after 91 days.
Non-extractable residues: 14 and 22 % after 100 days, 31 and 35 %

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after 91 days.
Distribution in water/sediment systems (active substance): After 1 day: 47-64% in water, 31-44% in sediment; after 100 days 3% in water, 29-44% in sediment.
In sediment: Maximum 50-60% after 14 days and 30-50% after 100 days, respectively.

12.4. Bioaccumulative Potential:
BCF: Bluegill sunfish, <1. No significant bioaccumulation is expected.

12.5. Other Adverse Effects:
Not available.

13. DISPOSAL CONSIDERATIONS

Empty any product remaining in damaged or leaking containers into a clean empty container that should be suitably labelled.
Absorb spillage of liquid products with sawdust or sand, sweep up and place in separate container.
These should be burnt in incinerator designed for pesticide disposal. When no incinerator is available, bury in an approved dump or in an area where there is no risk of contamination of ground or surface water. Comply with any local legislation applying to waste disposal.

14. TRANSPORT INFORMATION

IMDG

14.1. UN number	:	2902
14.2. UN proper shipping name	:	Pesticide, Liquid, Toxic, N.O.S.
14.3.Transport hazard Class	:	6.1
14.4. Packing group	:	III
14.5 Environmental hazards	:	Not a marine pollutant

15. REGULATORY INFORMATION

According to ST/SG/AC.10/30/Rev.6 GHS of Classification and Labelling of Chemicals

16. OTHER INFORMATION

Although the information in this SDS was obtained from sources which we believe to be reliable, it can not be guaranteed. In addition this information may be used in a manner beyond our knowledge or control. The information is therefore provided for advice purposes only, without any representation or warranty express or implied.

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