

**Safety Data Sheet (SDS)**

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 05/05/2015

Reviewed on 05/05/2015

**\* 1 Identification**

- **Product identifier**
- **Trade name: Plant Plus™**
- **Relevant identified uses of the substance or mixture and uses advised against**  
For agricultural use only. Not for human or animal consumption.
- **Product description**  
A commercial agricultural product used to improve soil and/or plant health and for improved growth.  
NPK Values: 0 - 0 - 2
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Actagro, LLC  
677 W. Palmdon Dr. #108  
Fresno, CA 93704  
Phone: (559) 369-2222  
Fax: (559) 843-2845
- **Emergency telephone number:** INFOTRAC: (800) 535-5053

**\* 2 Hazard(s) identification**

**Classification of the substance or mixture**

**Classification according to 29 CFR**

<b>1910.1200</b> Eye Irritation	Category 2B	H320
Acute Toxicity (Dermal)	Category 5	H313
Acute Toxicity (Oral)	Category 5	H302

**Label elements**



Signal word: WARNING  
 Hazard: H320 – Causes eye irritation.  
 Statement: H313 – May be harmful in contact with skin.  
 H302 – Harmful if swallowed

Precautionary Statement:  
 P261 – Avoid breathing dust / fume / gas / mist / vapors / spray  
 P273 - Avoid release to the environment  
 P280 - Wear protective gloves and eye / face protection  
 (Prevention):  
 Precautionary Statement:  
 P337 + P313 – If eye irritation persists: get medical attention  
 (Response):  
 P305 + P351 + P338 – IF IN EYES: Rinse with water for 15 to 20 minutes. Remove contact lenses, if present, and continue rinsing eyes.  
 P302 + P352 – IF ON SKIN: Wash with plenty of water for 15 to 20 minutes

Precautionary Statement (general): P101 + P102 + P103 – If medical advice is needed, have product container or label available. Keep out of reach of children. Read label before use

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**Trade name: Plant Plus™****2.3 Other hazards**

None known

**KEEP OUT OF REACH OF CHILDREN –**

Appearance and odor: Black liquid with slight odor.

**WARNING – CATEGORY 2B CAUSES EYE IRRITATION, CATEGORY 5 MAY BE HARMFUL IN CONTACT WITH SKIN, CATEGORY 5 HARMFUL IF SWALLOWED****Potential Health effects**

<b>Routes of exposure</b>	Eye contact, skin contact, inhalation. Avoid breathing spray mist.
<b>Eyes</b>	Causes eye irritation.
<b>Skin</b>	Can cause skin irritation.
<b>Inhalation</b>	May be irritating to respiratory system.
<b>Ingestion</b>	May be irritating to mouth, throat, and stomach.
<b>Target organs</b>	Eyes. Skin. Inhalation.
<b>Signs and symptoms</b>	May be harmful if swallowed, absorbed through skin or inhaled.
<b>Potential environmental effects</b>	This product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have harmful or damaging effect on the environment.

**\* 3 Composition/information on ingredients**

CAS: 7732-18-5 RTECS: ZC 0110000	water, distilled, conductivity or of similar purity	60-90%
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· **Chemical characterization: Mixtures**· **Description:** Mixture of substances listed below with nonhazardous additions.· **Dangerous Components:**

CAS: 1415-93-6	Leonardite ⚠ STOT SE 3, H335; Eye Irrit. 2B, H320; Combustible Dust	15-35%
CAS: 1310-58-3 RTECS: TT 2102000	Potassium Hydroxide ⚠ Skin Corr. 1A, H314; ⚠ Acute Tox. 4, H302	≤ 2.5%
CAS: 1310-73-2	Sodium Hydroxide ⚠ Skin Corr. 1A, H314	≤ 2.5%

**\* 4 First-aid measures**· **Description of first aid measures**· **General information:** Immediately remove any clothing soiled by the product.· **After inhalation:**

Supply fresh air. If required, provide artificial respiration. Consult doctor if symptoms persist.

In case of unconsciousness, place patient securely on side position for transportation.

· **After skin contact:**

Immediately wash with water and soap and rinse thoroughly.

If skin irritation occurs, consult a doctor.

· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.· **After swallowing:** Drink copious amounts of water and provide fresh air. Immediately call a doctor.· **Information for doctor:**· **Most important symptoms and effects, both acute and delayed:** No further relevant information available.· **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

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**Trade name: Plant Plus™****\* 5 Fire-fighting measures**

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture**  
If incinerated, product will release the following toxic fumes: Oxides of Carbon, Potassium, Silicon and Sodium.
- **Advice for firefighters**
- **Protective equipment:**  
As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

**\* 6 Accidental release measures**

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation  
Material can create slippery conditions.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (ie. sand, diatomite, acid binders, universal binders, sawdust).  
Use neutralizing agent.  
Dispose contaminated material as waste according to section 13.  
Ensure adequate ventilation.  
Dispose of the collected material according to regulations.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

**7 Handling and storage**

<b>PRECAUTIONS FOR SAFE HANDLING:</b>	Avoid inhalation of dusts, vapors / spray and contact with eyes, skin and clothing. Do not breathe dusts, mist or vapor. Wear personal protective equipment. Do not use in areas without adequate ventilation. Avoid prolonged exposure. Wash thoroughly after handling. Do not empty into drains. Handle and open container with care. Use care in handling/storage. Wash before eating, drinking and/or smoking.
Advice on Safe Handling:	
<b>CONDITIONS FOR SAFE STORAGE:</b>	DO NOT STORE OR TRANSPORT IN ALUMINUM CONTAINERS. No air sparging; NH <sub>4</sub> <sup>+</sup> converts to NH <sub>3</sub> if pH > 8. Store in original containers only. Cold storage okay with circulation. Keep containers tightly closed when not in use. Store in a cool, dry, well-ventilated area, preferably in a locked storage area away from children, feed, food products, and seed. Do not contaminate water, food or feed by storage or disposal.
Requirements for Storage Areas and Containers:	

**\* 8 Exposure controls/personal protection**

- **Additional information about design of technical systems:** No further data; see section 7.

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**Trade name: Plant Plus™****Control parameters**

All ventilation should be designed in accordance with OSHA standard (29 CFR 1910.94). Use local exhaust at filling zones and where leakage and dust formation is probable. Use mechanical (general) ventilation for storage areas. Use appropriate ventilation as required to keep Exposure Limits in Air below TLV & PEL limits.

**Components with occupational exposure limits:****1310-58-3 Potassium Hydroxide**REL Ceiling limit value: 2 mg/m<sup>3</sup>TLV Ceiling limit value: 2 mg/m<sup>3</sup>**1310-73-2 Sodium Hydroxide**PEL Long-term value: 2 mg/m<sup>3</sup>REL Ceiling limit value: 2 mg/m<sup>3</sup>TLV Ceiling limit value: 2 mg/m<sup>3</sup>**EXPOSURE****CONTROLS:****Engineering Measures**

Provide adequate general and local exhaust ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors and spray mists. Provide eyewash station and safety shower.

**Individual Protection Measures:**

Eye / Face Protection: Goggles or shielded safety glasses are recommended.

Skin Protection: Chemical resistant clothing is recommended. Routinely wash work clothing and protective equipment to remove contaminants. The use of chemical-resistant gloves is recommended when handling undiluted product. Be aware that the liquid may penetrate the gloves.

Respiratory Protection: Frequent change is advisable.  
In case of inadequate ventilation or risk of inhalation of dusts or vapors, use suitable respiratory equipment such as MSHA/NIOSH TC-21C or NIOSH approved respirator with N, R, P or HE filter. Wear respiratory protection during operations where spraying or misting occurs. If respirators are used, a program should be in place to assure compliance with 29 CFR 1910.134, the OSHA Respiratory Protection standard. Wear air supplied respiratory protection if exposure concentrations are unknown.

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**Trade name: Plant Plus™****\* 9 Physical and chemical properties****· Information on basic physical and chemical properties****· General Information****· Appearance:**

**Form:** Liquid  
**Color:** Black  
**Odor:** Odorless

**· Odor threshold:** Not determined.**· pH-value @ 20 °C (68 °F):** 11-12.5**· Change in condition****Melting point/Melting range:** Not determined.**Boiling point/Boiling range:** 100 °C (212 °F)**· Flash point:** Not applicable.**· Flammability (solid, gaseous):** Not applicable.**· Ignition temperature:****Decomposition temperature:** Not determined.**· Auto igniting:** Product is not self-igniting.**· Danger of explosion:** Product does not present an explosion hazard.**· Explosion limits:****Lower:** 0.0 Vol %**Upper:** 0.0 Vol %**· Vapor pressure @ 20 °C (68 °F):** 23 hPa (17 mm Hg)**· Density @ 20 °C (68 °F):** 1.127 g/cm<sup>3</sup> (9.4 lbs/gal)**· Relative density** Not determined.**· Vapor density** Not determined.**· Evaporation rate** Not determined.**· Solubility in / Miscibility with****Water:** Soluble.**· Partition coefficient (n-octanol/water):** Not determined.**· Viscosity:****Dynamic:** Not determined.**Kinematic:** Not determined.**· Solvent content:****Organic solvents:** 0.0 %**Water:** 68.3 %**· Other information** No further relevant information available.

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**Trade name: Plant Plus™****\* 10 Stability and reactivity**

- **Reactivity** No further relevant information available.
- **Chemical stability** Stable under normal conditions.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:**  
None known.
- **Hazardous decomposition products:** Oxides of Carbon, Potassium, Silicon and Sodium.

**\* 11 Toxicological information****LIKELY ROUTES OF EXPOSURE**

Eye contact, skin contact.

**LC50 (rat)** No data available for product**LD50 Oral (rat):** 273 mg/kg (Potassium Hydroxide)**LD50 Dermal (rat):** No data available for product**Acute Toxicity Estimates:** No data available for product**Skin Irritation (rabbit):** No data available for product**Eye Irritation (rabbit):** No data available for product**Specific Target Organ Toxicity:** Single exposure: No data available for product.**Aspiration:** No data available for product**Skin Sensitization (guinea pig):** Not a sensitizer**Carcinogenicity:** No data available for product**Germ Cell Mutagenicity:** No data available for product**Interactive Effects:** None known**\* 12 Ecological information**

- **Toxicity** The hazards for the aquatic environment are unknown.
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

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**Trade name: Plant Plus™****\* 13 Disposal considerations****· Waste treatment methods****· Recommendation:**

Small amounts may be diluted with plenty of water and washed away. Dispose of bigger amounts in accordance with Local Authority requirements.

**· Uncleaned packagings:****· Recommendation:**

Dispose of as unused product.

Disposal must be made according to official regulations.

**14 Transport information****14.1 LAND TRANSPORT**

**DOT Shipping Description:** NOT REGULATED.

**U.S. Surface Freight Classification:** FERTILIZING COMPOUNDS (MANUFACTURED FERTILIZERS), NOI, LIQUID (NMFC 68140, SUB 6; CLASS 70)

**\* 15 Regulatory information****16 Other information**

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

**· Date of preparation / last revision 05/05/2015 / -****· Abbreviations and acronyms:**

ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road

ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Acute Tox. 4: Acute toxicity, Hazard Category 4

Skin Corr. 1A: Skin corrosion/irritation, Hazard Category 1A

Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1

Eye Irrit. 2B: Serious eye damage/eye irritation, Hazard Category 2B

STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3