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**Safety Data Sheet for use in USA dated: October 18, 2011**

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**1. IDENTIFICATION OF THE PRODUCT AND OF THE COMPANY**

Trade name: **BADGE® X<sub>2</sub>**  
Trade code: GL002  
EPA Reg. No.: 80289-12  
Product type and use: Fungicide  
Company: Isagro USA- 430 Davis Dr., Suite 240, Morrisville NC 27560  
Subsidiary of: Isagro S.p.A. – Via Caldera, 21 – 20153 Milano, Italy  
Emergency telephone numbers:  
Isagro USA (919) 321-5200 / CHEMTREC (800) 421-9300

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**2. COMPOSITION/INFORMATION ON ACTIVE INGREDIENTS**

23.82%-Copper Oxychloride\*  
CAS: 1332-40-7

21.49%-Copper Hydroxide\*  
CAS: 20427-59-2

\*Metallic Copper(Cu<sup>2+</sup>) Equivalent is 28% by weight

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**3. HAZARDS IDENTIFICATION**

WARNING- Causes substantial but temporary eye injury. Harmful if swallowed, absorbed through the skin, or inhaled. Do not get in eyes, on skin or on clothing. Avoid contact with skin, eyes or clothing.

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**4. FIRST AID MEASURES**

**IF IN EYES**

- **Hold eye open and rinse slowly and gently with water for 15 to 20 minutes.**
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
- Call a poison control center or doctor for treatment advice.

**IF SWALLOWED**

- Call a poison control center or doctor immediately for treatment advice.
- Have person sip a glass of water if unable to swallow.
- Do not induce vomiting unless told to do so by a poison control center or doctor.
- Do not give anything by mouth to an unconscious person

**IF INHALED**

- Move person to fresh air.
- If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.
- Call a poison control center or doctor for further treatment advice.

**IF ON SKIN**

- Take off contaminated clothing.
  - Rinse skin immediately with plenty of water for 15 to 20 minutes.
  - Call a poison control center or doctor for treatment advice.
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**5. FIRE-FIGHTING MEASURES**

Recommended extinguishers:

BADGE X<sub>2</sub> is not flammable or explosive. Use water, CO<sub>2</sub>, Foam, Chemical powders, according to the materials involved in the fire.

Extinguishers not to be used:

None in particular.

Risks arising from combustion:

Avoid inhaling the fumes which at high temperatures may contain toxic substances such as HCl.

Protective equipment:

Use standard protection equipment according to the materials involved in the fire.

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## 6. ACCIDENTAL RELEASE MEASURES

Measures for personal safety:

Use gloves and protective eyewear and clothing (see Section 8).

Environmental measures:

Control spills with soil or sand. If the product has entered a waterway and/or drainage system, or has contaminated the ground and/or vegetation, notify the competent authorities.

Cleaning methods:

Rapidly recover the product and prevent it from entering into drainage systems, if possible. In so doing wear protective clothing (see Section 8). The product might, where appropriate, be absorbed by inert material. After the product has been recovered, rinse the area and contaminated materials involved with water. Dispose unrecoverable product, absorbant material and/or rinsate solids as hazardous substance (see Section 13).

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## 7. HANDLING AND STORAGE

Handling precautions:

Do not eat, drink or smoke while working.

Incompatible materials:

None in particular.

Storage conditions:

Store in a cool, dry place

Instructions regarding storage premises:

Adequately ventilated premises.

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Precautionary measures:

Give adequate ventilation to the premises where the product is stored and/or handled.

Respiratory protection:

Not needed for normal use.

Protection for hands:

Use chemical resistant gloves made of waterproof material, such as polyvinyl chloride, nitrile rubber, or butyl rubber.

Eye protection:

Use protective eyewear.

Protection for skin:

Use coveralls (long sleeve shirt and pants) and shoes plus socks

Exposure limit(s) (ACGIH):

None

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and colour:	Microgranules of light blue-greenish color
Odour:	Faint aromatic odor
pH:	7.67(suspension 1% in water)
Flamibility properties:	Not flammable
Explosive properties:	Not explosive
Relative density:	1110 g/L
Solubility in water:	Dispersible
Lipid solubility:	Dispersible
Partition c(n-octanol/H <sub>2</sub> O):	Not applicable
Particle Size:	99% > 75µm

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## 10. STABILITY AND REACTIVITY

Conditions to avoid:

Stable under normal conditions.

Substances to avoid:

None in particular.

Hazardous decomposition products:

None.

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## 11. TOXICOLOGICAL INFORMATION

Acute toxicity:

LD50 (oral): >300mg/kg b.w. (rat, female)

LD50 (dermal): > 2000 mg/kg b.w. (rat)

LC50 (4h) (inhalation): not required

Irritation:

Skin: not irritant (rabbit).  
Eyes: mild irritant (rabbit).

Sensitization:

Not sensitizing agent.

Data referred to technical Copper Oxychloride and Copper Hydroxide:

Carcinogenic effects:  
No carcinogenic effects.

Mutagenic effects:  
No mutagenic effects.

Teratogenic effects:  
No teratogenic effects.

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## 12. ECOLOGICAL INFORMATION

List of substances dangerous for the environment and corresponding classification:

Data referred to technical Copper Oxychloride

Fish (*Onchorhynchus mykiss*): LC50 (96h): 0.217 mg Cu/L  
Freshwater invertebrate (*Daphnia magna*): LC50 (48h): 0.29 mg Cu/L  
Algae (*Scenedesmus Subspicatus*): EC50 (72h): 56.3 mg Cu/L

Data referred to technical Copper Hydroxide

Fish (*Onchorhynchus mykiss*): LC50 (96h): 0.0165 mg Cu/L  
Freshwater invertebrate (*Daphnia magna*): LC50 (48h): 0.0422 mg Cu/L  
Algae (*Scenedesmus Subspicatus*): EC50 (72h): 22.5 mg Cu/L

List of substances dangerous for the environment and corresponding classification:

Copper Oxychloride technical  
CAS: 1332-40-7  
Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Copper Hydroxide technical  
CAS: 20427-59-2  
Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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## 13. DISPOSAL CONSIDERATIONS

Recover if possible. Send non-recoverable product, absorbant material, and rinsate solids to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

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## 14. TRANSPORT INFORMATION

DOT-UN Number: N/A  
DOT-Class: N/A  
DOT-Shipping Name: N/A (pesticide-non regulated)  
DOT-Label/Placard: N/A  
DOT-Packing Group: N/A  
DOT-Marine Pollutant: Yes [regulated only for bulk packaging and vessel (i.e. barge shipments). In these cases follow IMDG information below for appropriate labeling and classification]

ADR/RID-UN Number: 3077  
ADR/RID-Class: 9  
ADR/RID-Shipping Name: Environmentally Hazardous Substance, Solid, N.O.S.  
ADR/RID-Label/Placard: 9  
ADR/RID-Packing Group: III

AD/RID-Marine Pollutant:	Yes (add description and Environmentally Hazardous Substance label for vessel shipment only)
IMDG-UN Number:	3077
IMDG-Class:	9
IMDG-Shipping Name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (24.6% copper oxychloride, 22.9% copper hydroxide)
IMDG-Label/Placard:	9 + Environmentally Hazardous Substance Label
IMDG-Packing Group:	III
IMDG-Marine Pollutant:	Yes (add to shipping paper and include % of ingredient)
IMDG-EmS:	F-A, S-F

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**15. REGULATORY INFORMATION**

USEPA Registration Number 80289-12

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**16. OTHER INFORMATION**

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality. It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended. This MSDS cancels and replaces any preceding release for use in the US.