SAFETY DATA SHEET

Biocide 1400

Section 1. Identification

GHS product identifier : **Biocide 1400**
E.P.A. Registered Biocide

Other means of identification : Proprietary Information

Product use : Not available.

Product type : Liquid.

Manufacturer : **Jacam Manufacturing 2013, L.L.C.**
P.O. Box 208, 1656 Ave. Q.
Sterling, Kansas 67579

Validation date : 01/26/2015

For Chemical Emergency Spill, Leak Fire, Exposure or Accident:

Call CHEMTREC Day or Night
Within USA and Canada 800-424-9300 CCN# 11754 Or +1 703-527-3887 (Collect calls accepted)

Direct all other calls to:
Jacam Chemicals 2013, L.L.C. 620-278-3355
Mon – Fri 8 a.m. to 5 p.m. (Closed on major holidays)

Supplier's details : **Jacam Chemicals 2013, L.L.C.**
P.O. Box 96, 205 S. Broadway
Sterling, Kansas 67579

2. HAZARDS IDENTIFICATION

Hazard classification
This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.
Acute toxicity - Category 4 - Oral
Acute toxicity - Category 4 - Inhalation
Skin corrosion - Category 1B
Serious eye damage - Category 1
Respiratory sensitisation - Category 1
Skin sensitisation - Category 1
Specific target organ toxicity - single exposure - Category 3

Label elements
Hazard pictograms

Signal word: **DANGER!**

Hazards
Harmful if swallowed or inhaled
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause respiratory irritation.

Precautionary statements

Prevention
Avoid breathing dust/fume/gas/mist/vapours/spray.
Wash skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.
In case of inadequate ventilation wear respiratory protection.

Response
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
If skin irritation or rash occurs: Get medical advice/attention.
If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
Wash contaminated clothing before reuse.

Storage
Store in a well-ventilated place. Keep container tightly closed.
Store in accordance with all local, regional, national and international regulations.

Disposal
Dispose of contents/ container to an approved waste disposal plant.

Other hazards
No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CASRN	Concentration
Glutaraldehyde	111-30-8	14.0%
Water	7732-18-5	<= 83.0%
Quaternary ammonium compounds, benzyl-C12-16 alkyldimethyl, chlorides	68424-85-1	2.5%
Ethanol	64-17-5	<=0.3%

4. FIRST AID MEASURES

Description of first aid measures
General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice. If breathing is difficult, oxygen should be administered by qualified personnel.

Skin contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Wash clothing before reuse. Shoes and other leather items which cannot be decontaminated should be disposed of properly.

Eye contact: Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist.

Ingestion: If the person is fully alert and cooperative, have the person rinse mouth with plenty of water. In cases of ingestion, have the person drink 4 to 10 ounces (120-300 mL) of water. Do not induce vomiting. Do not attempt mouth rinse if the person has respiratory distress, altered mental status, or nausea and vomiting. Call a physician and/or transport to emergency facility immediately.

Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed
Notes to physician: Maintain adequate ventilation and oxygenation of the patient. May cause respiratory sensitization or asthma-like symptoms. Bronchodilators, expectorants and antitussives may be of help. Treat bronchospasm with inhaled beta2 agonist and oral or parental corticosteroids. Glutaraldehyde may transiently worsen reversible airways obstruction including asthma or reactive airways disease. Exposure to vapors may result in skin sensitization. In sensitized individuals, re-exposure to very small amounts of vapor, mist, or liquid may cause a severe allergic skin reaction. Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. If burn is present, treat as any thermal burn, after decontamination. Due to irritant properties, swallowing may result in burns/ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done. Probable mucosal damage may contraindicate the use of gastric lavage. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment. Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome).

5. FIREFIGHTING MEASURES

Suitable extinguishing media: To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam.

Unsuitable extinguishing media: None known.

Special hazards arising from the substance or mixture
Hazardous combustion products: Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: This material will not burn until the water has evaporated. Residue can burn.

Advice for firefighters
Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Evacuate area. Keep upwind of spill. Ventilate area of leak or spill. Only trained and properly protected personnel must be involved in clean-up operations. Refer to section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. .

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information

Methods and materials for containment and cleaning up: Avoid making contact with spilled material, glutaraldehyde will be absorbed by most shoes. Always wear the correct protective equipment, consisting of splashproof monogoggles, or both safety glasses with side shields and a wraparound full-face shield, appropriate gloves and protective clothing. A self-contained breathing apparatus or respirator and absorbents may be necessary, depending on the size of the spill and the adequacy of ventilation. Small spills: Wear the correct protective equipment and cover the liquid with absorbent material. Collect and seal the material and the dirt that has absorbed the spilled material in polyethylene bags and place in a drum for transit to an approved disposal site. Rinse away the remaining spilled material with water to reduce odor, and discharge the rinsate into a municipal or industrial sewer. Large spills: In case of nasal and respiratory irritation, vacate the room immediately. Personnel cleaning up should be trained and equipped with a self-contained breathing apparatus, or an officially approved or certified full-face respirator equipped with an organic vapor cartridge, gloves, and clothing impervious to glutaraldehyde, including rubber boots or shoe protection. Deactivate with sodium bisulfite (2-3 parts (by weight) per part of active substance glutaraldehyde), collect the neutralized liquid and place in a drum for transit to an approved disposal site.

7. HANDLING AND STORAGE

Precautions for safe handling: .Keep out of reach of children. Do not get in eyes, on skin, on clothing. Do not swallow. Avoid prolonged or repeated contact with skin. Avoid breathing vapor. Keep container closed. Use with adequate ventilation. Wear goggles, protective clothing and butyl or nitrile gloves. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Do not spray or aerosolize the undiluted form of the product. Full personal protective equipment (including skin covering and full-face SCBA respirator) is required for dilutions or mixtures of the product used in a spray application.

Conditions for safe storage: Do not store in: Aluminum. Carbon steel. Copper. Mild steel. Iron.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Controlparameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
Glutaraldehyde	ACGIH	C	0.05 ppm
	ACGIH	C	DSEN,RSEN
Ethanol	ACGIH	TWA	1,000 ppm
	ACGIH	STEL	1,000 ppm
	OSHA Z-1	TWA	1.900 mg/m3 1,000 ppm

Exposure Controls

Engineering controls: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use chemical goggles. If exposure causes eye discomfort, use a full-face respirator.

Skin protection

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Examples of acceptable glove barrier materials include: Nitrile/butadiene rubber ("nitrile" or "NBR"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task. Use chemical protective clothing resistant to this material, when there is any possibility of skin contact.

Respiratory protection: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required, use an approved air-purifying or positive-pressure supplied-air respirator depending on the potential airborne concentration. For operations such as spraying/misting and other conditions such as emergencies where the exposure guideline may be greatly exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air-supply.
The following should be effective types of air-purifying respirators: Full-face Organic vapor cartridge with a particulate pre-filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	Liquid.
Color	Colorless to yellow
Odor	Fruity
Odor Threshold	< 1 ppb *Literature*
pH	3.1 – 4.5 *Calculated*
Melting point/range	Not applicable
Freezing point	-3 °C (2 7 °F) *Calculated*
Boiling point (760 mmHg)	100.7 °C (213.3 °F) *OECD Test Guideline 103.*
Flash point	**closed cup** *ASTM D56* (none)
Evaporation Rate (Butyl Acetate = 1)	0.8 *Calculated*
Flammability (solid, gas)	Not applicable to liquids
Lower explosion limit	No test data available
Upper explosion limit	No test data available
Vapor Pressure	0.3 mmHg at 20 °C (68 °F) *OECD Test Guideline 104* Active ingredient
Relative Vapor Density (air = 1)	0.7 *Calculated*
Specific Gravity (water = 1)	1.02 to 1.05
Density	8.51 to 8.76
Water solubility	100 % at 20 °C (68 °F) *EC Method A6*
Partition coefficient: n-octanol/water	No data available

Auto-ignition temperature	No test data available
Decomposition temperature	No test data available
Dynamic Viscosity	3.2 mPa.s at 20 °C (68 °F) (Brookfield Viscosity)
Kinematic Viscosity	3.09 cSt and 20 °C (68 °F) *Calculated*
Explosive properties	No data available
Oxidizing properties	No data available
Liquid Density	8.62 lb/gln at 20 °C (68 °F) *Calculated*
Molecular weight	No test data available

NOTE: The physical data presented above are typical values and should not be construed as a specification

10. STABILITY AND REACTIVITY

Reactivity: No dangerous reaction known under conditions of normal use.

Chemical stability: Thermally stable at typical use temperatures.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Active ingredient decomposes at elevated temperatures.

Incompatible materials: Avoid contact with: Amines. Ammonia. Strong acids. Strong bases. Strong oxidizers. Avoid contact with metals such as: Aluminum. Carbon steel. Copper. Iron. Mild steel.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available..

Acute toxicity

Acute oral toxicity

Low toxicity if swallowed. Swallowing may result in irritation or burns of the mouth, throat, and gastrointestinal tract. Swallowing may result in gastrointestinal irritation or ulceration. Excessive exposure may cause: Headache. Dizziness. Anesthetic effects. Drowsiness. Unconsciousness. Other central nervous system effects.

Single dose oral LD50 has not been determined.

Typical for this family of materials.
LD50, Rat, >900 mg/kg

Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

The dermal LD50 has not been determined.

Typical for this family of materials.
LD50, Rabbit, > 16,000 mg/kg

Acute inhalation toxicity
Vapor may cause severe irritation of the upper respiratory tract (nose and throat). Vapor from heated material or mist may cause serious adverse effects, even death. Case reports and medical surveys link asthma and respiratory irritation to glutaraldehyde exposure, primarily in medical personnel. Asthma-like symptoms may occur in people prone to respiratory disorders or other allergies. Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening.
As product: The LC50 has not been determined.

Skin corrosion/irritation
Brief contact may cause skin burns. Symptoms may include pain, severe local redness and tissue damage.

Serious eye damage/eye irritation
May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.
Vapor may cause eye irritation experienced as mild discomfort and redness.

Sensitization
Skin contact may cause an allergic skin reaction in a small proportion of individuals.
Based on information for component(s):
Has caused allergic skin reactions when tested in guinea pigs.
Has demonstrated the potential for contact allergy in mice.

May cause allergic respiratory response in a small proportion of individuals.

Specific Target Organ Systemic Toxicity (Single Exposure)
Contains component(s) which are classified as specific target organ toxicant, single exposure, category 3

Specific Target Organ Systemic Toxicity (Repeated Exposure)
Repeated skin contact may result in absorption of amounts which could cause death.
May cause nausea and vomiting.

Carcinogenicity
In a NTP chronic 2-year inhalation study on glutaraldehyde, no carcinogenicity was seen in rats or in mice. An increase in large granular lymphocytes in Fischer rats dosed with glutaraldehyde for two years was random or a secondary carcinogenic effect due to a modifying influence on the occurrence of this common neoplasm in this rat strain.

Teratogenicity
For glutaraldehyde: Has been toxic to the fetus in laboratory animals at doses toxic to the mother.
Did not cause birth defects in laboratory animals.

Reproductive toxicity
For glutaraldehyde: In animal studies, did not interfere with reproduction.

Mutagenicity
For glutaraldehyde: In vitro genetic toxicity studies were negative in some cases and positive in other cases.
Animal genetic toxicity studies were predominantly negative.

Aspiration Hazard
Aspiration into the lungs may occur during ingestion or vomiting, causing tissue damage or lung injury.

COMPONENTS INFLUENCING TOXICOLOGY:

Glutaraldehyde

Acute inhalation toxicity
LC50, Rat, female, 4 Hour, dust/mist, 0.28 mg/l

LC50, Rat, male, 4 Hour, dust/mist, 0.35 mg/l

Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides

Acute inhalation toxicity
The LC50 has not been determined.

Ethanol

Acute inhalation toxicity
LC50, Rat, 4 Hour, vapour, 124.7 mg/l

12. ECOLOGICALINFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity

Acute toxicity to fish
Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).

LC50, Oncorhynchus mykiss (rainbow trout), static test, 96 Hour, 25 mg/l, OECD Test Guideline 203 or Equivalent

LC50, Lepomis macrochirus (Bluegill sunfish), static test, 96 Hour, 13 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates
LC50, Daphnia magna (Water flea), static test, 48 hour, 3.5 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants
For Glutaraldehyde.
NOEC, Desmodesmus subspicatus (Scenedesmus subspicatus), 72 Hour, Growth rate inhibition, 0.025 mg/l

Chronic aquatic toxicity
Chronic toxicity to aquatic invertebrates
For Glutaraldehyde.
NOEC, water flea Daphnia magna, flow-through test, 21 d, number of offspring, 0.12 mg/l

For Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides.
NOEC, Daphnia magna (Water flea), 21 d, 0.0042 mg/l

Toxicity to Above Ground Organisms
Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).
Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm).

oral LD50, Anas platyrhynchos (Mallard duck), 28 d, 2,109 mg/kg

dietary LC50, Anas platyrhynchos (Mallard duck), 8 d, > 5,620 ppm

dietary LC50, Colinua virginianus (Bobwhite quail), 5 d, > 5,620 ppm

Persistence and degradability

Glutaraldehyde

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
10-day Window: Pass
Biodegradation: 73 %
Exposure time: 9 d
Method: OECD Test Guideline 301A or Equivalent
10-Day Window: Not applicable
Biodegradation: 73%
Exposure time: 28 d
Method: OECD Test Guideline 306 or Equivalent

Theoretical Oxygen Demand: 1.92 mg/mg

Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	28 %
10 d	57 - 63%

Photodegradation
Test Type: Half-life (indirect photolysis)
Sensitizer: OH radicals
Atmospheric half-life: 2.74 Hour
Method: Estimated.

Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides

Biodegradability: Material is expected to be readily biodegradable.
10-day Window: Pass
Biodegradation: > 95.5 %
Exposure time: 28 d
Method: OECD Test Guideline 301B or Equivalent

Biodegradation: >99%
Exposure time: 7 d
Method: OECD Test Guideline 302A or Equivalent

Biodegradation: > 90%
Method: OECD Test Guideline 303A or Equivalent

Ethanol

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
10-day Window: Pass
Biodegradation: > 70 %
Exposure time: 5 d
Method: OECD Test Guideline 301D or Equivalent

Theoretical Oxygen Demand: 2.08 mg/mg

Photodegradation
Test Type: Half-life (indirect photolysis)
Sensitizer: OH radicals
Atmospheric half-life: 2.99 d
Method: Estimated.

Bioaccumulative potential

Glutaraldehyde
Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3)
Partition coefficient: n-octanol/water(log Pow): -0.333 Measured

Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides
Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3)
Bioconcentration factor (BCF); 33.3 Lepomis macrochirus (Bluegill sunfish) 60 d Measured

Ethanol
Bioaccumulation: Bioaccumulation is unlikely. Bioconcentration potential is low (BCF < 100 Or Log Pow < 3)
Partition coefficient: n-octanol/water(log Pow): -0.31 Measured

Mobility in soil

Glutaraldehyde
Potential for mobility in soil is high (Koc between 50 and 150).
Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.
Partition coefficient(Koc): 120 - 500 Estimated.

Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides
No relevant data found.

Ethanol
Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient(Koc): 1.0 Estimated.

13. DISPOSAL CONSIDERATIONS

Disposal methods: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device.

14. TRANSPORT INFORMATION

DOT

Proper shipping name	Corrosive liquid, acidic, organic, n.o.s (Glutaraldehyde)
UN number	UN 3265
Class	8
Packing group	III
ERG	153

Classification for SEA transport (IMO-IMDG):

Proper shipping name	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Glutaraldehyde)
UN number	UN 3265
Class	8
Packing group	III
Marine pollutant	Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Proper shipping name	Corrosive liquid, toxic, n.o.s.(Glutaraldehyde)
UN number	UN 3265
Class	8
Packing group	III

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material

15. REGULATORY INFORMATION

OSHA Hazard Communication Standard
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312
Acute Health Hazard

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Pennsylvania Worker and Community Right-To-Know Act:
The following chemicals are listed because of the additional requirements of Pennsylvania law:

Components	**CASRN**
Glutaraldehyde	111-30-8

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute..

United States TSCA Inventory (TSCA)
This product contains chemical substance(s) exempt from U.S. EPA TSCA Inventory requirements. It is regulated as a pesticide subject to Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requirements.

Federal Insecticide, Fungicide and Rodenticide Act
EPA Registration Number: 464-700
This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

DANGER

Corrosive
Causes irreversible eye damage
Causes skin irritation
Harmful if inhaled
Harmful if swallowed
Harmful if absorbed through skin
Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.
Causes asthmatic signs and symptoms in hyper-reactive individuals.
This pesticide is toxic to fish, aquatic invertebrates, oysters and shrimp.

16. OTHER INFORMATION

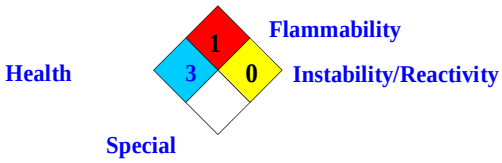
Revision
Identification Number: 101273563 / A001 / Issue Date: 02/29/2016 / Version: 2.1
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document

Legend

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
C	Ceiling limit
DSEN, RSEN	Skin and respiratory sensitizer
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) – Table Z-1 Limits for Air Contaminants.
STEL	Short-term exposure limit
TWA	8-hour time weighted average

Information Source and References
This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Normal Package Size(s): Ball: 2" Ball 50/Cooler; 4" Ball 12/Cooler
Dry Product: 50 Lbs/Box
Liquid: 5 Gallon/55 Gallon/Bulk
Pellets: 30 Lbs/Cooler; 24 Lbs/Pail
Stix: 1 1/4": 50 each/Cooler

History

Date of issue/Date of revision : 01/26/2016
Version : **1.01**
Date of previous issue Previous : 03/22/2016
Validation Date : 03/22/2016

Prepared by : Jacam Regulatory Department

(M)SDS Requests: : **SDS@jacam.com**

Key to abbreviations:

ATE = Acute Toxicity Estimate
BCF = Bio-concentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

References : Not available.

Noticetoreader

This Safety Data Sheet ("SDS") is a mandatory disclosure pursuant to 29 CFR § 1910.1200 and related rules and regulations. Therefore, it is not intended, nor shall it serve to create, any rights, obligations, liabilities, and remedies, of any kind whatsoever, between Jacam Chemicals 2013, LLC and related entities ("Jacam") and any users of this SDS ("Users").

To the extent that a court of competent jurisdiction determines that this SDS creates any rights, obligations, liabilities, and remedies, of any kind whatsoever, notwithstanding the foregoing paragraph, Users accept the product AS IS and WITH ALL FAULTS. Further, Jacam DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Users' sole and exclusive remedies shall be (if any), in Jacam's sole and absolute discretion, either: (1) return of the product and repayment of the purchase price; or (2) repair/replacement of the product. In no event shall Jacam be liable for any damages of any kind whatsoever, including but not limited to, actual, compensatory, reliance, expectancy, foreseeable, future, statutory, incidental, consequential, and exemplary damages. Users assume any and all risks of any kind whatsoever that in any way relate to the product.

***** END OF SDS *****