SAFETY DATA SHEET
BIOZAP INDUSTRIAL BIOCIDE

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

Product name: GLOBAL BIOZAP

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Application

Industrial biocide for treating metalworking fluid emulsions and other water-based products. Refer to the supplier for further advice on suitability and recommendations for specific applications.

2. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous ingredients:

A synergistic mixture of synthetic corrosion inhibitors and linear and cyclic hydroxyalkylamines, with other additives.

Components Include:	EINECS	Wt %	EC Classification
•2,2'2"-(hexahydro-1,3,5-triazine-1,3, 5-triyl)triethanol	225-208-0	20-40	Xn; R22-43
•Boric acid, compound with 2-aminoethanol	247-421-8	40-60	Xi; R36/38
•Pyridine-2-thiol 1-oxide, sodium salt	223-296-5	1-5	Xn; R20/21/22-36/38-50

Note: The above components may not necessarily constitute the complete composition of the product.

Refer to Section 16, Other Information, for full text of R Phrases

3. HAZARDS IDENTIFICATION

This product is classified as Dangerous for Supply according to EC Dangerous Substances/Preparations Directives - Xn: Harmful; Irritant; Skin Sensitizer

Health and Safety

Harmful if swallowed. The product is strongly irritating in the eye with a potential to cause corneal injury if treatment is not prompt. In contact with the skin, the product may cause irritation which could become more intense if not promptly removed or if contact is frequent or prolonged. The product contains a hexahydrotriazine which may be capable of causing allergic skin reactions in susceptible individuals,or which may provoke a response in individuals who have previously been sensitized to it from other sources. For further information, refer to Sections 11 and 16.

Environmental
Exhibits good biodegradability at dilutions below minimum inhibitory concentration values. Contains a component which is toxic to aquatic organisms. For further information, refer to Section 12.

Special Hazards After Use
Under some abnormal usage conditions (e.g. acidic conditions less than pH 6.5) the product could release ethylamine and formaldehyde.

4. FIRST AID MEASURES (SYMPTOMS)

Skin contact: There may be irritation and rashes.

Eye contact: There may be strong irritation and stinging at the site of contact

Ingestion: Irritation of the mouth and throat. Nausea and drowsiness may occur

Inhalation: Irritation of respiratory tract from exposure to fumes and mists.

4. FIRST-AID MEASURES

Eye Contact wash eye thoroughly with plenty of clean water for at least 15 minutes, ensuring stinging eyelids are held open. It is advisable to obtain medical advice before removing contact lenses. Obtain medical attention without delay.

Skin Contact Wash thoroughly from the skin with soap and water without delay. Remove contaminated clothing. Wash/launder contaminated clothing before re-use. If irritation or other adverse skin reactions persist, obtain medical advice.

Inhalation For effects produced by over-exposure, move to fresh air. If effects persist, obtain medical advice.

Ingestion Do not induce vomiting without medical advice. Wash out mouth with water and obtain medical attention. Milk or water to drink may be beneficial (do not give anything to drink to an unconscious person). Treat symptomatically.

Notes for Doctors
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flammability
Low fire risk due to water content, high flash point and low volatility. High energy sources (such as open flames) may induce combustion of the undiluted product, especially after evaporation of the water content.

Extinguishing Media

Small Fires: Foam, dry powder, carbon dioxide, sand or earth.

Large Fires: Foam or water fog - DO NOT USE WATER JETS.

Products of Combustion
Combustion can produce a variety of compounds including: oxides of carbon; oxides of nitrogen; oxides of boron; formaldehyde; water vapour; partially oxidised organic compounds and other unidentified organic and inorganic compounds. Some of these compounds may be toxic.

Special Fire Hazards
Large surface areas exposed to air/oxygen (e.g. oil-soaked rags, paper or absorbed spillages) may be easily ignited and these should be cleared up at once.

Special Fire-Fighting Procedures
Firefighters should wear self-contained breathing apparatus. Do not spray water directly into storage containers due to boil over danger. Water may be used to cool nearby containers/surfaces.

6. ACCIDENTAL RELEASE MEASURES

Contain spillage and prevent entry to drains or watercourses. Spillages can be slippery so affected areas should be thoroughly cleaned afterwards.

Safety Precautions
Wear suitable protective clothing, particularly eye protection. Refer to Section 8 for further details.

Small Spills
Soak in absorbent granules, sand or earth and collect solids into a suitable, marked container for proper disposal. Thoroughly clean spillage area as spillages can be slippery.

Large Spills
Bund the area using absorbent granules, booms, sand or earth. Temporarily seal exposed drainage outlets. Reclaim liquid directly or soak in an absorbent medium, and transfer to a suitable, marked container for proper disposal.

Disposal of Spillage
Disposal must be in accordance with local regulations and (in the UK) the Environmental Protection. Act 1990. Refer to Section 13 for further details.

7. HANDLING AND STORAGE

Handling

Avoid contact with skin and eyes - wear suitable eye protection and protective gloves. Do not mix with acids. Be careful when opening containers so as not to inhale any fumes or vapours which may build up in the free air space.

Storage

Store in dry conditions protected from frost and elevated temperature. Store in original containers or in other epoxy-lined steel or high
density polyethylene containers which are closable and clearly labelled. Do not use unprotected metal.

Additional Guidance

The supplier can provide further advice on dilution rates for specific applications.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits

An exposure limit for the product has not been established. Under acidic or conditions causing decomposition, formaldehyde could be released - for exposure limits, see below.

Notes

Formaldehyde determination. Primary OSHA Method: Collection on a XAD-2 coated tube, followed by solvent extraction and gas chromatography. Secondary methods: Detector tubes; passive dosimeter/badges.

General: General ventilation, safe working procedures and training should form the basis for exposure controls. Local forced extraction may be needed

Controls: If mists, fumes or vapours are generated. Wash hands after use, before eating, drinking, or smoking, and before and after using the toilet.Contaminated clothing should be removed and laundered before re-use.

Personal Protective Equipment Type(s) to Consider

Eyes/Face Use eye protection when handling the product. Chemical eye shield, spectacles or goggles.

Hands/Skin: Impervious gloves are recommended when handling the product. The use of appropriate gloves should always be considered when handling the neat product. Gloves should not have knitted wrists and/or open backs. Nitrile having a breakthrough time >360 minutes against alkanolamines and formaldehyde are expected to be suitable. Consider mechanical/tear resistance if handling items which could damage the glove.

Respiratory Protection: Respiratory protection is not normally required. However, suitable respiratory equipment may need to be provided for those operations which generate vapours, mists or fumes where exposure cannot be adequately controlled by local exhaust ventilation or other means or when vapours are released due to conditions causing decomposition. Respiratory full or half-masks. For fumes or vapours,

consider combination types FF- A1 or A2 with K1 or K2 giving protection against both organic vapours, and ammonia/amines.

Other: EN345 safety boots (or EN347 working shoes). Work overalls to protect against skin contact.

Environmental: Suitable system design or appropriate controls should be in place to ensure that the product cannot discharge to drain, unless it is suitably

Controls: treated to conform with local regulatory discharge standards.

NOTE: The above advice is based on and limited to our knowledge and experience of the product. It is the responsibility of the user to determine what particular controls and types of protective equipment are suitable and appropriate in relation to the specific conditions under which the product is used.

9. PHYSICAL AND CHEMICAL PROPERTIES

The following are indicative values only
Appearance and State Yellow liquid
Odour Mild amine-like
Flash Point > 100ºC (not readily determinable due to water content)
Autoignition Temperature > 100ºC
Flammability Limits (% in air) Not established
Relative Density (@ 20 C) 1.2
Boiling Point/Range (C) >100 (based on components)
Pour Point/Melting Point (C) < -2
Vapour Pressure No data
Vapour Density (air = 1) No data
Evaporation Rate (but.acetate=1) <1
Kinematic Viscosity (@ 40 C) No data
Acidity/Alkalinity Slightly alkaline
pH 9.9 @ 1%
Solubility In Water Readily miscible
Solubility In Solvents No data
Water/Oil Partition Coefficient No specific test data.

10. STABILITY AND REACTIVITY

Stability
This product is stable and unlikely to react in a hazardous manner under normal conditions of use, but can decompose when mixed with acids

Conditions to Avoid
Extremes of temperature. Acid conditions: material will decompose to release ethylamine and formaldehyde when the pH is less than 6.5.

Materials to Avoid
Strong oxidising agents (e.g. chlorates, peroxides). Strong acids - decomposition can occur when mixed with acids. May soften some rubbers and other elastomeric sealing materials. Do not store in containers made from copper, aluminium or zinc.

Decomposition Products
Thermal decomposition can produce a variety of compounds, the nature of which will largely depend on the conditions bringing about decomposition. Incomplete combustion or thermal decomposition may be expected to generate such materials as: oxides of carbon; formaldehyde; ammonia; amines; ethylamine; water vapour; partially oxidised organic compounds; and other unidentified organic and inorganic compounds.

11. TOXICOLOGICAL INFORMATION

Toxicological data is based on information on components, including some experimentally determined information, and knowledge and experienceof this and similar products.

Acute Toxicity
Ingestion: Oral LD50: <2000 (mg/Kg rats)
The product has a moderate order of acute oral toxicity. Swallowing the product may cause intense irritation of the mouth, throat and digestive tract, and may cause nausea and abdominal pain.
Dermal: Dermal LD50: > 2000 (mg/Kg rabbits)
Dermal toxicity is not regarded as a health hazard likely to arise in normal use - prolonged skin contact is unlikely to result in the absorption of harmful amounts.
Inhalation: Inhalation LC50: Not Established/No data
When used under the circumstances for which it is intended, the product does not normally give rise to harmful concentrations of vapour. Vapours from heated product, or due to decomposition caused, for example, by acidic conditions, can include formaldehyde which can be harmful.

Corrosivity/Irritation
Eyes Contact with the product or strong solutions can cause intense irritation and stinging, with a significant potential to cause corneal injury if treatment is not prompt.

Skin The undiluted product or strong solutions may cause irritation especially if contact is persistant. The product contains hexahydrotriazine which may be capable of causing allergic skin reactions in sensitive individuals, or which may provoke a response in individuals who have previously been sensitised.

Respiratory High temperature or atomising systems may give rise to vapours, mists or fumes which could irritate eyes and respiratory tract.

Sensitisation Contains hexahydrotriazine. This may be capable of causing allergic skin reactions in susceptible individuals, or it may cause individuals who are already sensitized to react to its presence in the product. See also Section 16.

Chronic Toxicity There are no reports of long-term adverse toxic effects in man attributable to the use of this type of product.

Carcinogenicity Acidic conditions, or other conditions causing decomposition, may result in the release of formaldehyde which is a suspected occupational carcinogen.

Mutagenicity There are no reports of mutagenic effects attributable to the use of this type of product.

Reproductive Toxicity There are no reports of reproductive effects attributable to the use of this type of product.

Additional Notes Contamination during use or mixing with other chemicals can affect the above properties, and in some cases may introduce additional hazards.

12. ECOLOGICAL INFORMATION

Ecological data is based on information on components and knowledge and experience of this or similar products

Mobility

The product will disperse as a solution in water. If released on land, small quantities will be absorbed in the upper soil layers where biodegradation may take place. Larger quantities may penetrate into anaerobic soil layers where some compounds may persist. Many of the components have a high soil absorption coefficient which should help to prevent significant contamination of ground water. If they reach the water table, the components are likely to disperse as a solution.

Degradability and Persistence

The individual components can vary in their biodegradability rates, but they are all expected to biodegrade when diluted to below minimum inhibitory concentration values.

Bioaccumulative Potential

The product will disperse as a solution in water, and components are not expected to bioaccumulate.

Aquatic Toxicity

The product contains a small (<2%) amount of a component which is toxic to aquatic life if released in concentrated amounts. Aquatic toxicity of this component is 8.6m/L Bluegill sunfish (96hrs), 7.3ug/L Rainbow Trout (96hrs), 22ug/L Daphnia magna (48hrs). The acute fish toxicity of the main biocidal active component is reported to be approximately 27mg/L. If released to water, the product will disperse as a solution. The product contains boron: water-soluble borates are widely distributed naturally in the soil and sea. Boron is an essential micronutrient for plants - but it is phytotoxic in higher concentrations.

Additional Notes

The product consists of components of low volatility which are not expected to be released to air in any significant quantities. Conditions causing decomposition could cause formaldehyde gas to be released.

WGK Classification: 2 (VwVwS Annex 4)

13. DISPOSAL CONSIDERATIONS

Do not contaminate ponds, water courses, soil or drains. Ensure all means of disposal comply with national and regional regulations. These include: in the EC:- the Waste Framework Directive (75/442/EEC), Hazardous Waste Directive (91/689/EEC) and amendments/additions; and in the UK:- the Environmental Protection Act 1990, Environment Act 1995 and Hazardous Waste Regulations 2005 and amendments.
Note: it is the end-user's responsibility to determine the regulatory status of waste at the time of disposal.

Undiluted Product
Do not dispose of untreated waste down the drains. The product may be incinerated in suitable equipment and under controlled conditions. Alternatively, the product can be disposed of via an authorised person/licensed waste disposal contractor.

Diluted Product
Diluted material should be treated in an appropriate effluent treatment facility or disposed of via an authorised person/licensed waste disposal contractor. If the product is mixed with other materials, the waste regulatory status, and suitable means of disposal of such mixtures, will need to be assessed based on considerations of the properties of the mixture taking account of all the components in the mixture.

Contaminated Packs
Any special regulatory disposal status or provisions applicable to the product may also apply to empty containers or packaging if they
contain, or are impregnated with, residual material.

14. TRANSPORT INFORMATION

UK Road Not Regulated
ADR Not Regulated
Sea Transport Not Regulated
Marine Pollutant: No
Air Transport Not Regulated
UN Classification Not Regulated
UN Number Not Applicable
UN Pack Group Not Applicable

15. REGULATORY INFORMATION

EC Classification
Xn: Harmful; Irritant; Skin Sensitizer
Contains 2,2'2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol


Xn

Label Phrases
R22: Harmful if swallowed.
R36/38: Irritating to eyes and skin.
R43: May cause sensitization by skin contact.
S24/25: Avoid contact with skin and eyes.
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/37: Wear suitable protective clothing and gloves.
S46: If swallowed, seek medical advice immediately and show this container or label.
S60: This material and its container must be disposed of as hazardous waste.

UK Regulations/ EC Directives The product is not known to be subject to any specific EC provisions or restrictions. The above classification needs to be considered when carrying out workplace risk assessments, such as (in the UK) those required by COSHH Regulations using the principles in the HSE's 'COSHH Essentials'.

16. OTHER INFORMATION

1)This material contains a biocide (hexahydrotriazine) which may be capable of causing an allergic skin reaction in sensitive individuals Practical experience over many years indicates that the incidents of such sensitisation, arising from its use in metalworking fluids at the recommended concentrations is very low .However the nature of allergic skin reactions means that individuals who have previously been sensitised to the biocide itself,or to formaldehyde (and this may have been as a result of exposure to other types of products in other applications) may react to this biocide, even when it is present at very low levels. 2) For labelling classification purposes, a concentration limit for the active hexahydrotriazine of 0.1% is prescribed in the EU. At of above which products containing it are required to be classified and labelled as skin sensitisers. 3)Specific usage requirements need to be based upon the circumstances of each individual case. Generally the usage concentration would normally be designed to give a level of between 0.05 and 0.15 %(500-1500ppm) in metalworking fluid emulsions. 4) Due to the potential problems that may be encountered when using at too high or too low a concentration, it is advised that our recommendation for each individual requirement is obtained if there is any doubt about the appropriate useage concentration.

Full Text of EC R Phrases Used in This Safety Data Sheet
R Phrase Text
20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
22 Harmful if swallowed.
36/38 Irritating to eyes and skin.
43 May cause sensitization by skin contact.
50 Very toxic to aquatic organisms.

UK Regulations EC Directives
For additional advice regarding specific applications, refer to the product Technical Data Sheet or contact the supplier. The information on this Data Sheet relates only to the designated product when used for the purposes indicated. It may not be valid if the product is used for other purposes, in combination with other materials, or in any process. References may be made to regulations or standards relevant to use within the United Kingdom. Other national or local standards should be observed if the product is used outside the United Kingdom.