



FOR ANY EMERGENCY, 24 HOURS / 7 DAYS, CALL:	1-800-654-6911 (OUTSIDE USA: 1-423-780-2970)
FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC®:	1-800-424-9300 (OUTSIDE USA: 1-703-527-3887)
FOR ALL MSDS QUESTIONS & REQUESTS, CALL:	1-800-511-MSDS (OUTSIDE USA: 1-423-780-2347)

PRODUCT NAME: BAQUACIL Swimming Pool Sanitizer & Algistat
EPA Registration Number: 1258-1263

1. PRODUCT AND COMPANY IDENTIFICATION

Arch Chemicals, Inc. 501 Merritt 7 PO Box 5204 Norwalk, CT 06856-5204	REVISION DATE:	09/22/2010
	SUPERCEDES:	11/11/2009
	MSDS Number:	000000001717
	SYNONYMS:	None
	CHEMICAL FAMILY:	Biguanide
	DESCRIPTION / USE	Sanitizer & Algistat
	FORMULA:	None established

2. HAZARDS IDENTIFICATION

OSHA Hazard Classification:	Eye, skin and respiratory irritant, Possible skin sensitizer
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Routes of Entry:	Skin, eyes, ingestion
Chemical Interactions:	No known or reported interactions.
Medical Conditions Aggravated:	None known

Human Threshold Response Data

Odor Threshold	Not established for product.
Irritation Threshold	Not established for product.



Hazardous Materials Identification System / National Fire Protection Association Classifications

<u>Hazard Ratings :</u>	<u>Health</u>	<u>Flammability</u>	<u>Physical / Instability</u>	<u>PPI / Special hazard.</u>
HMIS	2	0	0	
NFPA	2	0	0	

Immediate (Acute) Health Effects

Inhalation Toxicity:	Not expected to be toxic by inhalation. Vapors and/or aerosols which may be formed at elevated temperatures may be irritating to eyes and upper respiratory tract.
Skin Toxicity:	Not expected to be absorbed through the skin. Skin contact may cause moderate irritation consisting of transient redness and swelling. This irritant effect would not be expected to result in permanent damage.
Eye Toxicity:	Contact may cause moderate irritation consisting of transient redness, swelling, and mucous membrane discharge to the conjunctiva. Any visual impairment or corneal damage (opacity) would be expected to clear within several days.
Ingestion Toxicity:	Moderately toxic if swallowed. Ingestion may cause irritation of the gastrointestinal tract and gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting or diarrhea.
Acute Target Organ Toxicity:	May cause skin, eye and mucous membrane irritation (includes upper respiratory tract). Ingestion may cause gastrointestinal discomfort.

Prolonged (Chronic) Health Effects

Carcinogenicity:	This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP or EPA.
Reproductive and Developmental Toxicity:	No reproductive or developmental risk to humans is expected from exposure to this product. The active ingredient in this product has been tested in laboratory animals and no evidence of teratogenicity or reproductive toxicity was seen.
Inhalation:	There are no known or reported effects from chronic exposure.
Skin Contact:	Repeated or prolonged skin contact may cause some individuals to develop skin rash and other skin complications due to allergic skin sensitization. PHMB when tested at 1.0% in the HRIPT, PHMB did not produce irritation or allergic skin reactions.
Ingestion:	There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure.
Sensitization:	Possible skin sensitizer based on animal tests PHMB when tested at 1.0% in the HRIPT, PHMB did not produce irritation or allergic skin reactions.
Chronic Target Organ Toxicity:	There are no known or reported effects to humans from repeated exposure to this product.



Supplemental Health Hazard
Information :

Polyaminopropyl Biguanide, the biocidal active in this product, has been extensively studied for its toxicity to mammalian systems. Repeated inhalation exposure in rats over a period of 4 weeks resulted in eye and respiratory irritation and pneumonitis. Long term feeding studies in dogs show that the liver and kidney are target organs and the effect occur only at very high doses. Polyaminopropyl Biguanide has been shown in animal studies to produce skin sensitization. Polyaminopropyl Biguanide is not readily bioavailable if ingested and is not well absorbed through skin., PHMB when tested at 1.0% in the HRIPT, PHMB did not produce irritation or allergic skin reactions.

3. COMPOSITION / INFORMATION ON INGREDIENTS

<u>CAS OR CHEMICAL NAME</u>	<u>CAS #</u>	<u>% RANGE</u>
Water	7732-18-5	80 -
Poly(hexamethylenebiguanide) hydrochloride	32289-58-0	20 -

4. FIRST AID MEASURES

General Advice:	Call a poison control center or doctor for treatment advice. For 24-hour emergency medical assistance, call Arch Chemical Emergency Action Network at 1-800-654-6911. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.
Inhalation:	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.
Skin Contact:	IF ON SKIN OR CLOTHING: 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.
Eye Contact:	IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 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.
Ingestion:	IF SWALLOWED: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able 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.



5. FIRE FIGHTING MEASURES

Flammability Summary (OSHA): Product is not known to be flammable, combustible, pyrophoric or explosive.

Flammable Properties

Flash Point: boils without flashing
Autoignition Temperature: Not applicable
Fire / Explosion Hazards: Material will not ignite or burn.
Extinguishing Media: Choose extinguishing media suitable for surrounding materials.
Fire Fighting Instructions: In case of fire, use normal fire-fighting equipment and the personal protective equipment recommended in Section 8 to include a NIOSH approved self-contained breathing apparatus. Use water to cool containers.
Hazardous Combustion Products: Carbon monoxide, Carbon dioxide
Upper Flammable / Explosive Limit, % in air: Not applicable
Lower Flammable / Explosive Limit, % in air: Not applicable

6. ACCIDENTAL RELEASE MEASURES

Personal Protection for Emergency Situations: Use the personal protective equipment recommended in Section 8 and a NIOSH approved self-contained breathing apparatus.

Spill Mitigation Procedures

Air Release: Hazardous concentrations in air may be found in local spill area and immediately downwind. Contain all liquids for treatment or disposal.
Water Release: Notify all downstream users of possible contamination. Divert water flow around spill if possible and safe to do so. Contain all liquids for treatment or disposal.
Land Release: Create a dike or trench to contain materials. Absorb spill with inert material (e.g., dry sand, clay, earth or commercial absorbent), then place in a chemical waste container. Contain all liquids for treatment or disposal. Avoid runoff into storm sewers and ditches which lead to waterways.
Additional Spill Information : Utilize emergency response personal protection equipment prior to the start of any response. Evacuate all non-essential personnel. Stop source of spill as soon as possible and notify appropriate personnel. Dispose of spill residues per guidelines under Section 13, Disposal Consideration.



7. HANDLING AND STORAGE

Handling: Do not take internally. Avoid contact with skin, eyes and clothing. Upon contact with skin or eyes, wash off with water. Avoid breathing (dust, vapor, mist, gas).

Storage: Store in a cool dry ventilated location, away from sources of ignition or other incompatible conditions and chemicals. Keep container(s) closed.

Incompatible Materials for Storage: Refer to Section 10, "Incompatible Materials."

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation: Local exhaust ventilation is recommended if vapors, mists or aerosols are generated. Otherwise, use general exhaust ventilation.

Protective Equipment for Routine Use of Product

Respiratory Protection : If vapors, mists or aerosols are generated, wear a NIOSH approved respirator.

Respirator Type : A NIOSH approved disposable P95 Acid Gases Respirator with Exhalation Valve.

Skin Protection : Use impervious gloves. When exposure to high concentrations are prolonged or repeated use protective boots and apron in addition to gloves.

Eye Protection: Use chemical goggles.

Protective Clothing Type: Impervious

General Protective Measures: An eye wash and safety shower should be provided in the immediate work area.

Exposure Limit Data

<u>CHEMICAL NAME</u>	<u>CAS #</u>	<u>Name of Limit</u>	<u>Exposure</u>
No Data Found			

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	liquid
Form	liquid
Color:	Blue
Odor:	Perfume
Molecular Weight:	None established
Specific Gravity :	1.0400
pH :	5.0 - 6.0
Boiling Point:	98 DEG°C / 210 DEG°F



Freezing Point:	No data
Melting Point:	No data
Density:	No data
Vapor Pressure:	No data
Vapor Density:	No data
Viscosity:	No data
Fat Solubility:	No data
Solubility in Water:	Soluble
Partition coefficient n-octanol/water:	No data
Evaporation Rate:	No data
Oxidizing:	No data
Volatiles, % by vol.:	No data
VOC Content	No data
HAP Content	No data

10. STABILITY AND REACTIVITY

Stability and Reactivity Summary:	Stable under normal conditions. Product will not undergo hazardous polymerization.
Conditions to Avoid:	Avoid contamination.
Chemical Incompatibility:	copper, silver, sodium hydroxide, metals
Hazardous Decomposition Products:	Carbon monoxide, Carbon dioxide, nitrogen oxides, Ammonia, Halogens, halogen acids, possible trace amounts of carbonyl halide
Decomposition Temperature:	No data

11. TOXICOLOGICAL INFORMATION

Component Animal Toxicology

Oral LD50 value:

Poly(hexamethylenebiguanide) hydrochloride LD50 = 501 mg/kg rat female
Poly(hexamethylenebiguanide) hydrochloride LD50 = 549 mg/kg rat male

Component Animal Toxicology

Dermal LD50 value:

Poly(hexamethylenebiguanide) hydrochloride LD50 > 5,000 mg/kg rat

Component Animal Toxicology

Inhalation LC50 value:

Poly(hexamethylenebiguanide) hydrochloride This product has been tested for acute inhalation toxicity. However, due to the physical nature of the product, an aerosol dust of desired particle size



could not be generated. Therefore, no animals could be exposed and no LC50 could be obtained.

Product Animal Toxicity

Oral LD50 value: LD50 Approximately 2,500 mg/kg rat female LD50 Approximately 2,700 mg/kg rat male

Dermal LD50 value: LD50 > 2,000 mg/kg rabbit

Inhalation LC50 value: No data

Skin Irritation: Moderate Skin Irritant

Eye Irritation: This material is expected to be moderately irritating.

Skin Sensitization: Possible skin sensitizer based on animal tests, PHMB when tested at 1.0% in the HRIPT, PHMB did not produce irritation or allergic skin reactions.

Acute Toxicity: May cause skin, eye and mucous membrane irritation (includes upper respiratory tract). Ingestion may cause gastrointestinal discomfort.

Subchronic / Chronic Toxicity: Not known or reported to cause subchronic or chronic toxicity.

Reproductive and Developmental Toxicity: No reproductive or developmental risk to humans is expected from exposure to this product. The active ingredient in this product has been tested in laboratory animals and no evidence of teratogenicity or reproductive toxicity was seen.

Poly(hexamethylenebiguanide)
hydrochloride

This chemical has been tested in laboratory animals and there was no evidence of reproductive toxicity or teratogenicity.

Mutagenicity: Not known or reported to be mutagenic. The active ingredient in this product has been tested in a battery of mutagenicity assays and was found to be non-mutagenic under the conditions of the tests.

Poly(hexamethylenebiguanide)
hydrochloride

This chemical has been tested in a battery of mutagenicity/genotoxicity assays and the results were negative.

Carcinogenicity: This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP or EPA.

Poly(hexamethylenebiguanide)
hydrochloride

PHMB, when administered to mice at very high doses, induced an increased incidence of cancer in mice. Under the conditions of anticipated use of this product, PHMB does not represent a risk to man.



12. ECOLOGICAL INFORMATION

Overview: Ecotoxicity: Polyaminopropyl Biguanide is highly/very toxic to aquatic species. It is unlikely to bioaccumulate or persist in the aquatic environment.,
Environmental fate: Polyaminopropyl Biguanide will be predominantly absorbed onto sludge solids; the remainder is unlikely to be readily or inherently biodegraded or abiotically degraded with the exception of low molecular weight species., Polyaminopropyl Biguanide could be slightly inhibitory to sewage treatment systems. However, at the low concentrations typically discharged to and received by treatment systems, adverse impacts are unlikely.
Polyaminopropyl Biguanide is unlikely to adversely affect plants or soil indigenous species.

Ecological Toxicity Values for: Poly(hexamethylenebiguanide) hydrochloride

Rainbow trout (<i>Salmo gairdneri</i>),	-	96 h LC50 = 0.026 mg/l
Bluegill sunfish	-	96 h LC50 0.11 mg/l
Fish	-	chronic toxicity The Lowest Observable Effect Concentration (LOEC): > 0.010 mg/l
Fish	-	chronic toxicity The No Observable Effect Concentration (NOEC): = 0.010 mg/l
Oncorhynchus mykiss (rainbow trout)	-	flow-through test 96 h LC50 0.026 mg/l
Daphnia magna,	-	48 h EC50= 0.04 mg/l
Brown Shrimp	-	96 h LC50= 9 mg/l
Daphnia magna,	-	21 day NOEC (chronic toxicity) The No Observable Effect Concentration (NOEC):= 0.0036 mg/l
Daphnia magna (Water flea)	-	48 h EC50 0.09 mg/l
Green algae,	-	96 h EC50 = 0.49 - 0.87 mg/l
Pseudokirchneriella subcapitata (green algae)	-	72 h ErC50 0.0191 mg/l
	-	In an assessment of the effect of PHMB on nitrification of activated sludge micro-organisms the 4hr EC50 was 38 mg/l and the NOEC = 12 mg/l.
Bacteria	-	4 h EC50 38 mg/l



13. DISPOSAL CONSIDERATIONS

CARE MUST BE TAKEN TO PREVENT ENVIRONMENTAL CONTAMINATION FROM THE USE OF THE MATERIAL. THE USER OF THE MATERIAL HAS THE RESPONSIBILITY TO DISPOSE OF UNUSED MATERIAL, RESIDUES AND CONTAINERS IN COMPLIANCE WITH ALL RELEVANT LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS REGARDING TREATMENT, STORAGE AND DISPOSAL FOR HAZARDOUS AND NONHAZARDOUS WASTES.

Waste Disposal Summary : If this product becomes a waste, it will be a nonhazardous waste according to U.S. RCRA regulations. Dispose of in accordance with all Local, State, Federal, and Provincial Environmental Regulations.

Disposal Methods : As a nonhazardous waste, it should be disposed of in accordance with local, state and federal regulations.

Potential US EPA Waste Codes : Not applicable

14. TRANSPORT INFORMATION

Land (US DOT): UN3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (POLY(HEXAMETHYLENEBIGUANIDE) HYDROCHLORIDE) 9 III

Water (IMDG): UN3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (POLY(HEXAMETHYLENEBIGUANIDE) HYDROCHLORIDE) 9 III
MARINE POLLUTANT

Air (IATA): Flash Point: boils without flashing
UN3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (POLY(HEXAMETHYLENEBIGUANIDE) HYDROCHLORIDE) 9 III

Emergency Response Guide Number: ERG # 171

Transportation Notes: Material is not regulated as a marine pollutant for ground transportation within the US if shipped in non-bulk packages. Material is not regulated for ground transportation within the US if shipped in non-bulk packages.

EMS: F-A, S-F

15. REGULATORY INFORMATION

UNITED STATES:

Toxic Substances Control Act (TSCA): This is an EPA registered pesticide.
EPA Pesticide Registration Number: 1258-1263



FIFRA Listing of Pesticide Chemicals
(40 CFR 180):

This product is regulated under the Federal Insecticide,
Fungicide and Rodenticide Act. It must be used for purposes
consistent with its labeling.

Superfund Amendments and Reauthorization Act (SARA) Title III:

Hazard Categories Sections 311 / 312 (40 CFR 370.2):

Health Immediate (Acute) Health Hazard
Physical None

Emergency Planning & Community Right to Know (40 CFR 355, App. A):

Extremely Hazardous Substance Section 302 - Threshold Planning Quantity:

ZUS_SAR302 TPQ (threshold planning quantity) None established

Reportable Quantity (49 CFR 172.101, Appendix):

ZUS_CERCLA Reportable quantity None established
ZUS_SAR302 Reportable quantity None established

Supplier Notification Requirements (40 CFR 372.45), 313 Reportable Components

ZUS_SAR313 De minimis concentration None established

Clean Air Act Toxic ARP Section 112r:

CAA 112R None established

Clean Air Act Socmi:

HON SOC None established

Clean Air Act VOC Section 111:

CAA 111 None established

Clean Air Act Haz. Air Pollutants Section 112:

ZUS_CAAHAP None established

ZUS_CAAHRP None established

CAA AP None established

State Right-to-Know Regulations Status of Ingredients

Pennsylvania:

CAS #	COMPONENT NAME
ZUSPA_RTK	None established

BAQUACIL Swimming Pool Sanitizer & Algistat

REVISION DATE : 09/22/2010



New Jersey:

CAS #	COMPONENT NAME
3844-45-9	BLUE 1

ZUSNJ_RTK

New Jersey Right to Know Hazardous Substance List (RTK-HSL)

1989-12-01

C.I. ACID BLUE 9, DISODIUM SALT

hazardous substance

Massachusetts:

CAS #	COMPONENT NAME
3844-45-9	BLUE 1

Massachusetts:

CAS #	COMPONENT NAME
3844-45-9	BLUE 1

ZUSMA_RTK

Massachusetts Right to Know List of Chemicals and Hazard Classifications

1993-04-24

C.I. ACID BLUE 9, DISODIUM SALT

California Proposition 65:

CAS #	COMPONENT NAME
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ZUSCA_P65

None established

WHMIS Hazard Classification:

None established

16. OTHER INFORMATION

MSDS REVISION STATUS :

SECTIONS REVISED:

1

Major References :

Available upon request.



**Arch
Chemicals,
Inc.**

**MATERIAL SAFETY
DATA SHEET**

THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200. THE INFORMATION IN THIS MSDS SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. ARCH CHEMICALS BELIEVES THIS INFORMATION TO BE RELIABLE AND UP TO DATE AS OF THE DATE OF PUBLICATION BUT, MAKES NO WARRANTY THAT IT IS. ADDITIONALLY, IF THIS MSDS IS MORE THAN THREE YEARS OLD, YOU SHOULD CONTACT ARCH CHEMICALS MSDS CONTROL AT THE PHONE NUMBER ON THE FRONT PAGE TO MAKE CERTAIN THAT THIS DOCUMENT IS CURRENT. .