



# MATERIAL SAFETY DATA SHEET

Conforms to 93/112/EC and ISO 11014-1

Responsible Name: Diazyme Administration  
Effective: 4/29/13

## SECTION 1: PRODUCT and COMPANY IDENTIFICATION

### PRODUCT NAME:

Myoglobin Assay  
Myoglobin Assay Calibrator  
Myoglobin Assay Control

### CATALOG #

DZ147A  
DZ147A-CAL  
DZ147A-CON

Supplier: **Diazyme Laboratories**  
12889 Gregg Court  
Poway, CA 92064, USA  
858-455-4754

Manufacturer: **Diazyme Laboratories**  
12889 Gregg Court  
Poway, CA 92064, USA  
858-455-4754

Authorized Representative: **MDSS GmbH**  
Schiffgraben 41  
30175 Hannover  
Germany

In case of Emergency: Please call local authorities. Diazyme Laboratories (858-455-4754) will assist with any questions on product safety.

Intended Use: Refer to the instruction booklet for proper and intended use. Otherwise, contact supplier for specific applications.

## SECTION 2: HAZARDOUS INGREDIENTS

| Product    | Ingredient       | Amount | CAS #      | EINECS #  | Symbols | R-Phrase    | S-Phrase    |
|------------|------------------|--------|------------|-----------|---------|-------------|-------------|
| R1         | Trizma Base      | 1.2 %  | 77-86-1    | 201-064-4 | Xi      | 36/37/38    | 26; 36      |
| R1         | Choline Chloride | 17 %   | 67-48-1    | 200-655-4 | Xi      | 36/37/38    | 26; 36      |
| R1         | Sodium Azide     | 0.09 % | 26626-22-8 | 247-852-1 | T+, N   | 28/32/50/53 | 28/45/60/61 |
| R2         | Trizma Base      | 1.2 %  | 77-86-1    | 201-064-4 | Xi      | 36/37/38    | 26; 36      |
| R2         | Sodium Azide     | 0.09 % | 26626-22-8 | 247-852-1 | T+, N   | 28/32/50/53 | 28/45/60/61 |
| Calibrator | Sodium Azide     | 0.09 % | 26626-22-8 | 247-852-1 | T+, N   | 28/32/50/53 | 28/45/60/61 |
| Control    | Sodium Azide     | 0.09 % | 26626-22-8 | 247-852-1 | T+, N   | 28/32/50/53 | 28/45/60/61 |

NOTE: Physical and health hazard information on reagent mixtures has not been determined. Any physical and health information noted is based on 1) evaluation of data for the pure ingredients from the chemical vendors, and 2) concentration of ingredients as packaged.

## SECTION 3: HAZARD IDENTIFICATION

### TRIZMA BASE:

#### Emergency Overview

#### OSHA Hazards

Irritant

#### GHS Classification

Skin irritation (Category 2)

Eye irritation (Category 2A)

Specific target organ toxicity - single exposure (Category 3)

#### GHS Label elements, including precautionary statements

Signal word: Warning

Hazard statement(s)

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

Precautionary statement(s)

P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

P264 Wash skin thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/ eye protection/ face protection.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P312 Call a POISON CENTER or doctor/ physician if you feel unwell.

P321 Specific treatment (see supplemental first aid instructions on this label).

P332 + P313 If skin irritation occurs: Get medical advice/ attention.

Conforms to 93/112/EC and ISO 11014-1

Responsible Name: Diazyme Administration  
Effective: 4/29/13

**TRIZMA BASE (CONT.):**

P337 + P313 If eye irritation persists: Get medical advice/ attention.

P362 Take off contaminated clothing and wash before reuse.

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P501 Dispose of contents/ container to an approved waste disposal plant.

**HMIS Classification**

**Health hazard:** 2

**Flammability:** 0

**Physical hazards:** 0

**NFPA Rating**

**Health hazard:** 2

**Fire:** 0

**Reactivity Hazard:** 0

**Potential Health Effects**

**Inhalation** May be harmful if inhaled. Causes respiratory tract irritation.

**Skin** May be harmful if absorbed through skin. Causes skin irritation.

**Eyes** Causes eye irritation.

**Ingestion** May be harmful if swallowed.

**CHOLINE CHLORIDE:****Emergency Overview****OSHA Hazards**

Irritant

**GHS Classification**

Acute toxicity, Oral (Category 5)

Skin irritation (Category 2)

Eye irritation (Category 2A)

Specific target organ toxicity - single exposure (Category 3)

**GHS Label elements, including precautionary statements**

Signal word: Warning

Hazard statement(s)

H303 May be harmful if swallowed.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

Precautionary statement(s)

P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

P264 Wash skin thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/ eye protection/ face protection.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

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P312 Call a POISON CENTER or doctor/ physician if you feel unwell.

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P332 + P313 If skin irritation occurs: Get medical advice/ attention.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

P362 Take off contaminated clothing and wash before reuse.

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P501 Dispose of contents/ container to an approved waste disposal plant.

**HMIS Classification**

**Health hazard:** 2

**Flammability:** 0

**Physical hazards:** 0

**NFPA Rating**

**Health hazard:** 2

**Fire:** 0

**Reactivity Hazard:** 0

**Potential Health Effects**

**Inhalation** May be harmful if inhaled. Causes respiratory tract irritation.

**Skin** May be harmful if absorbed through skin. Causes skin irritation.

**Eyes** Causes eye irritation.

**Ingestion** May be harmful if swallowed.



## MATERIAL SAFETY DATA SHEET

Conforms to 93/112/EC and ISO 11014-1

Responsible Name: Diazyme Administration  
Effective: 4/29/13

### SODIUM AZIDE:

#### EMERGENCY OVERVIEW

*POISON! DANGER! MAY BE FATAL IF SWALLOWED OR ABSORBED THROUGH SKIN. HARMFUL IF INHALED. HAZARDOUS SOLID. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE OR EXPLOSION. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM, KIDNEYS, AND CARDIOVASCULAR SYSTEM.*

**SAF-T-DATA<sup>(tm)</sup>** Ratings (Provided here for your convenience)

Health Rating: 4 - Extreme (Poison)

Flammability Rating: 1 - Slight

Reactivity Rating: 4 - Extreme (Explosive)

Contact Rating: 4 - Extreme (Life)

Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER

Storage Color Code: Yellow Stripe (Store Separately)

#### Potential Health Effects

##### Inhalation:

May cause irritation to the respiratory tract and mucous membranes, sore throat, coughing, dizziness, shortness of breath, and fainting. May be absorbed through inhalation. Symptoms may parallel ingestion.

##### Ingestion:

Highly Toxic! May cause breathlessness, pulmonary edema and rapid heartbeat within 5 minutes. Nausea, vomiting, headache, restlessness, and diarrhea may occur within 15 minutes. Other symptoms may include low blood pressure, abnormal breathing, reduced body temperature, reduced body pH, convulsions, collapse and death.

##### Skin Contact:

Highly Toxic! Causes irritation, redness, and pain. May be absorbed through the skin; symptoms may parallel ingestion.

##### Eye Contact:

Causes irritation, redness, pain, and blurred vision.

##### Chronic Exposure:

No information found.

##### Aggravation of Pre-existing Conditions:

No information found.

**Safety Notice:** Calibrators and Controls contain human source material. No known test method can offer complete assurance that products derived from human blood will not transmit infectious agents. Consider all blood derivatives potentially infectious.

## SECTION 4: FIRST AID MEASURES

### TRIZMA BASE:

#### General advice:

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

#### If inhaled:

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact:

Wash off with soap and plenty of water. Consult a physician.

#### In case of eye contact:

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

#### If swallowed:

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### CHOLINE CHLORIDE:

#### General advice:

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

#### If inhaled:

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact:

Wash off with soap and plenty of water. Consult a physician.

#### In case of eye contact:

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

#### If swallowed:

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.



## MATERIAL SAFETY DATA SHEET

Conforms to 93/112/EC and ISO 11014-1

Responsible Name: Diazyme Administration  
Effective: 4/29/13

### SODIUM AZIDE:

**Inhalation:**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

**Ingestion:**

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

**Skin Contact:**

Wipe off excess material from skin then immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

**Eye Contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

**Note to Physician:**

Accidental ingestion of sodium azide is potentially life threatening. Treatment includes gastric lavage, followed by saline catharsis. EKG and blood pressure monitoring and support are recommended.

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## SECTION 5: FIRE FIGHTING MEASURES

### TRIZMA BASE:

**Suitable extinguishing media:**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special protective equipment for firefighters:**

Wear self contained breathing apparatus for firefighting if necessary.

**Hazardous combustion products:**

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)

### CHOLINE CHLORIDE:

**Conditions of flammability:**

Not flammable or combustible.

**Suitable extinguishing media:**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special protective equipment for firefighters:**

Wear self contained breathing apparatus for firefighting if necessary.

**Hazardous combustion products:**

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx), Hydrogen chloride gas.

### SODIUM AZIDE:

**Fire:**

Combustible solid. May pose a fire hazard upon heating, shock, concussion, or friction.

**Explosion:**

Decomposes explosively upon heating, shock, concussion, or friction. Reacts with both copper and lead to produce explosive azides. Explosions in laboratory plumbing containing these metals are possible. Sensitive to mechanical impact.

**Fire Extinguishing Media:**

Water spray, dry chemical, alcohol foam, or carbon dioxide.

**Special Information:**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode. Water spray may be used to keep fire exposed containers cool. Poisonous gases are produced in fire, including nitrogen oxides.

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## SECTION 6: ACCIDENTAL RELEASE MEASURES

### TRIZMA BASE:

**Personal precautions:**

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

**Environmental precautions:**

Do not let product enter drains.

**Methods and materials for containment and cleaning up:**

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.



## MATERIAL SAFETY DATA SHEET

Conforms to 93/112/EC and ISO 11014-1

Responsible Name: Diazyme Administration  
Effective: 4/29/13

### CHOLINE CHLORIDE:

#### Personal precautions:

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

#### Environmental precautions:

Do not let product enter drains.

#### Methods and materials for containment and cleaning up:

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

### SODIUM AZIDE:

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities.

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## SECTION 7: HANDLING AND STORAGE

### TRIZMA BASE:

#### Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

#### Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place.

-hygroscopic

### CHOLINE CHLORIDE:

#### Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed.

#### Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place.

Hygroscopic. Store under inert gas.

### SODIUM AZIDE:

Store in a tightly closed container. Store in a cool, dry, ventilated area away from sources of heat or ignition. Protect container from physical damage. Isolate from incompatible substances. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

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## SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

### TRIZMA BASE:

Contains no substances with occupational exposure limit values.

#### Personal protective equipment

##### Respiratory protection:

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

##### Hand protection:

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Immersion protection

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: > 480 min

Material tested: Dermatrill® (Aldrich Z677272, Size M)

Splash protection

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: > 30 min

Conforms to 93/112/EC and ISO 11014-1

Responsible Name: Diazyme Administration  
Effective: 4/29/13

**TRIZMA BASE (CONT.).**

Material tested: Dermatrill® (Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 873000, e-mail sales@kcl.de, test method:

EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This

recommendation is advisory only and must be evaluated by an Industrial

Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

**Eye protection**

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin and body protection**

Impervious clothing, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Hygiene measures**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of Workday.

**CHOLINE CHLORIDE:**

Contains no substances with occupational exposure limit values.

**Personal protective equipment****Respiratory protection:**

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hand protection:**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Immersion protection

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: > 480 min

Material tested: Dermatrill® (Aldrich Z677272, Size M)

Splash protection

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: > 30 min

Material tested: Dermatrill® (Aldrich Z677272, Size M)

Data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 873000, e-mail sales@kcl.de, test method:

EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This

recommendation is advisory only and must be evaluated by an Industrial

Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

**Eye protection:**

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin and body protection**

Impervious clothing, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Hygiene measures**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**SODIUM AZIDE:****Airborne Exposure Limits:**

-NIOSH Recommended Exposure Limit (REL):

0.1 ppm skin as HN<sub>3</sub>, 0.3 mg/m<sup>3</sup> skin as NaN<sub>3</sub> (Ceilings)

-ACGIH Threshold Limit Value (TLV):

0.11 ppm as HN<sub>3</sub>, 0.29 mg/m<sup>3</sup> as Na N<sub>3</sub> (Ceilings), A4 Not classifiable as a human carcinogen.

**Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

**Personal Respirators (NIOSH Approved):**

If the exposure limit is exceeded and engineering controls are not feasible, wear a supplied air, full-face piece respirator, airlined hood, or full-face piece self-contained breathing apparatus. Breathing air quality must meet the requirements of the OSHA respiratory protection standard (29CFR1910.134).

**Skin Protection:**

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

**Eye Protection:**

Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Conforms to 93/112/EC and ISO 11014-1

Responsible Name: Diazyme Administration  
Effective: 4/29/13**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES****TRIZMA BASE:****Appearance**Form: crystalline  
Color: colorless/white**Safety data**

pH: 10.5 - 12

**Melting**

Point/freezing point: Melting point/range: 167 - 172 °C (333 - 342 °F) - lit.

Boiling point: 219 - 220 °C (426 - 428 °F) at 13 hPa (10 mmHg) - lit.

Flash point: no data available

Ignition temperature: no data available

Autoignition  
Temperature: no data available

Lower explosion limit: no data available

Upper explosion limit: no data available

Vapor pressure: no data available  
Density: no data availableWater solubility: no data available  
Partition coefficient

N-octanol/water: no data available

Relative vapor  
Density: no data available

Odor: no data available

Odor Threshold: no data available

Evaporation rate: no data available

**CHOLINE CHLORIDE:****Appearance**Form: solid  
Color: white**Safety data**

pH: 5.0 - 6.5 at 140 g/l at 25 °C (77 °F)

**Melting**

Point/freezing point: Melting point/range: 302 - 305 °C (576 - 581 °F) - dec.

Boiling point: no data available

Flash point: no data available

Ignition temperature: no data available  
Auto ignition

Temperature: no data available

Lower explosion limit: no data available

Upper explosion limit: no data available



## MATERIAL SAFETY DATA SHEET

Conforms to 93/112/EC and ISO 11014-1

Responsible Name: Diazyme Administration  
Effective: 4/29/13

### CHOLINE CHLORIDE (CONT.).

Vapor pressure: no data available  
Density: no data available  
Water solubility: 140 g/l  
Partition coefficient:  
n-octanol/water: no data available  
Relative vapor  
Density: no data available  
Odor: no data available  
Odor Threshold: no data available  
Evaporation rate: no data available

### SODIUM AZIDE:

**Appearance:**

Colorless crystals.

**Odor:**

Odorless.

**Solubility:**

42 g/100 g water @ 17C (63F)

**Specific Gravity:**

1.85

**pH:**

No information found.

**% Volatiles by volume @ 21C (70F):**

0

**Boiling Point:**

Not applicable.

**Melting Point:**

275 (decomposes to sodium and nitrogen)

**Vapor Density (Air=1):**

2.2

**Vapor Pressure (mm Hg):**

No information found.

**Evaporation Rate (BuAc=1):**

No information found.

## SECTION 10: STABILITY AND REACTIVITY

### TRIZMA BASE:

**Chemical stability:**

Stable under recommended storage conditions.

**Possibility of hazardous reactions:**

no data available

**Conditions to avoid:**

Exposure to moisture.

**Materials to avoid:**

Strong oxidizing agents

**Hazardous decomposition products:**

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)

Other decomposition products - no data available



Conforms to 93/112/EC and ISO 11014-1

Responsible Name: Diazyme Administration  
Effective: 4/29/13**CHOLINE CHLORIDE:****Chemical stability:**

Stable under recommended storage conditions.

**Possibility of hazardous reactions:**

no data available

**Conditions to avoid:**

no data available

**Materials to avoid:**

Strong oxidizing agents, Strong acids, Strong bases

**Hazardous decomposition products:**

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx), Hydrogen chloride gas

Other decomposition products - no data available

**SODIUM AZIDE:****Stability:**

Stable under ordinary conditions of use and storage. Decomposes explosively upon heating, shock, concussion, or friction.

**Hazardous Decomposition Products:**Explodes upon decomposition liberating nitrogen gas (N<sub>2</sub>) and sodium (Na).**Hazardous Polymerization:**

Will not occur.

**Incompatibilities:**

Benzoyl chloride plus potassium hydroxide, bromine, carbon disulfide, chromyl chloride, copper, dibromalnonitrile, dimethyl sulfate, lead, barium carbonate, sulfuric acid, water, and nitric acid.

**Conditions to Avoid:**

Heat, flames, ignition sources and incompatibles

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**SECTION 11: TOXICOLOGICAL INFORMATION****TRIZMA BASE:****Acute toxicity****Oral LD50:**

LD50 Oral - rat - 5,900 mg/kg

**Inhalation LC50:**

no data available

**Dermal LD50:**

no data available

**Other information on acute toxicity:**

no data available

**Skin corrosion/irritation:**

no data available

**Serious eye damage/eye irritation:**

no data available

**Respiratory or skin sensitization:**

no data available

**Germ cell mutagenicity:**

no data available

**Carcinogenicity:**

IARC: No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No components of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity:**

no data available

**Teratogenicity:**

no data available

**Specific target organ toxicity - single exposure (Globally Harmonized System):**

Inhalation - May cause respiratory irritation.

**Specific target organ toxicity - repeated exposure (Globally Harmonized System):**

no data available

**Aspiration hazard:**

no data available

**Potential health effects:****Inhalation:** May be harmful if inhaled. Causes respiratory tract irritation.**Ingestion:** May be harmful if swallowed.



## MATERIAL SAFETY DATA SHEET

Conforms to 93/112/EC and ISO 11014-1

Responsible Name: Diazyme Administration  
Effective: 4/29/13

### TRIZMA BASE (CONT.):

**Skin:** May be harmful if absorbed through skin. Causes skin irritation.

**Eyes:** Causes eye irritation.

#### Signs and Symptoms of Exposure:

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

#### Synergistic effects:

no data available

#### Additional Information:

RTECS: TY290000

### CHOLINE CHLORIDE:

#### Acute toxicity:

##### Oral LD50:

LD50 Oral - rat - 3,400 mg/kg

Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste): Eye: Chromodacryorrhea.

Behavioral: Excitement. Respiratory disorder

##### Inhalation LC50/

##### Dermal LD50:

no data available

#### Other information on acute toxicity:

no data available

#### Skin corrosion/irritation:

no data available

#### Serious eye damage/eye irritation:

no data available

#### Respiratory or skin sensitization:

no data available

#### Germ cell mutagenicity:

no data available

#### Carcinogenicity:

IARC: No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No components of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

#### Reproductive toxicity:

no data available

#### Teratogenicity:

no data available

#### Specific target organ toxicity - single exposure (Globally Harmonized System):

Inhalation - May cause respiratory irritation.

#### Specific target organ toxicity - repeated exposure (Globally Harmonized System):

no data available

#### Aspiration hazard:

no data available

#### Potential health effects:

**Inhalation:** May be harmful if inhaled. Causes respiratory tract irritation.

**Ingestion:** May be harmful if swallowed.

**Skin:** May be harmful if absorbed through skin. Causes skin irritation.

**Eyes:** Causes eye irritation.

#### Signs and Symptoms of Exposure:

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

#### Synergistic effects:

no data available

#### Additional Information:

RTECS: KH2975000

### SODIUM AZIDE:

Oral rat LD50: 27 mg/kg Skin rabbit LD50: 20 mg/kg.

Inhalation rat LC50: 37 mg/m3 investigated as a tumorigen and mutagen.

-----\Cancer Lists\-----

---NTP Carcinogen---

| Ingredient | Known | Anticipated | IARC Category |
|------------|-------|-------------|---------------|
|------------|-------|-------------|---------------|

|                           |    |    |      |
|---------------------------|----|----|------|
| Sodium Azide (26628-22-8) | No | No | None |
|---------------------------|----|----|------|



Conforms to 93/112/EC and ISO 11014-1

Responsible Name: Diazyme Administration  
Effective: 4/29/13

## SECTION 12: ECOLOGICAL INFORMATION

### TRIZMA BASE:

**Toxicity:**

no data available

**Persistence and degradability:**

no data available

**Bioaccumulative potential:**

no data available

**Mobility in soil:**

no data available

**PBT and vPvB assessment:**

no data available

**Other adverse effects:**

no data available

### CHOLINE CHLORIDE:

**Toxicity:**

no data available

**Persistence and degradability:**

no data available

**Bioaccumulative potential:**

no data available

**Mobility in soil:**

no data available

**PBT and vPvB assessment:**

no data available

**Other adverse effects:**

no data available

### SODIUM AZIDE:

**Environmental Fate:**

When released into the soil, this material is not expected to biodegrade. When released into the soil, this material is expected to leach into groundwater. When released into the air, this material may be moderately degraded by photolysis.

**Environmental Toxicity:**

Dangerous to the environment. Very toxic to aquatic organisms; may cause long term adverse effects in the aquatic environment. Freshwater Fish Species Data:

96 Hr LC50 Oncorhynchus mykiss: 0.8 mg/L;

96 Hr LC50 Lepomis macrochirus: 0.7 mg/L;

96 Hr LC50 Pimephales promelas: 5.46 mg/L [flow-through]

## SECTION 13: DISPOSAL CONSIDERATIONS

DISPOSE OF IN ACCORDANCE WITH LOCAL REGULATIONS.

## SECTION 14: TRANSPORTATION INFORMATION

### TRIZMA BASE:

**DOT (US):**

Not dangerous goods

**IMDG:**

Not dangerous goods

**IATA:**

Not dangerous goods

### CHOLINE CHLORIDE:

**DOT (US):**

Not dangerous goods

**IMDG:**

Not dangerous goods

**IATA:**

Not dangerous goods



## MATERIAL SAFETY DATA SHEET

Conforms to 93/112/EC and ISO 11014-1

Responsible Name: Diazyme Administration  
Effective: 4/29/13

### SODIUM AZIDE:

**Domestic (Land, D.O.T.)**

-----  
**Proper Shipping Name:** SODIUM AZIDE

**Hazard Class:** 6.1

**UN/NA:** UN1687

## SECTION 15: REGULATORY INFORMATION

### TRIZMA BASE:

#### OSHA Hazards:

Irritant

#### SARA 302 Components:

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

#### SARA 313 Components:

SARA 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.

#### SARA 311/312 Hazards:

Acute Health Hazard

#### Massachusetts Right To Know Components:

No Components Listed

#### Pennsylvania Right To Know Components:

|                                   |         |
|-----------------------------------|---------|
| Tris (hydroxymethyl) aminomethane | CAS-No. |
|                                   | 77-86-1 |

#### New Jersey Right To Know Components

|                                   |         |
|-----------------------------------|---------|
| Tris (hydroxymethyl) aminomethane | CAS-No. |
|                                   | 77-86-1 |

### CHOLINE CHLORIDE:

#### OSHA Hazards:

Irritant

#### SARA 302 Components:

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

#### SARA 313 Components:

SARA 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.

#### SARA 311/312 Hazards:

Acute Health Hazard

#### Massachusetts Right To Know Components:

No components are subject to the Massachusetts Right to Know Act.

#### Pennsylvania Right To Know Components:

|                  |         |
|------------------|---------|
| Choline Chloride | CAS-No. |
|                  | 67-48-1 |

#### New Jersey Right To Know Components:

|                  |         |
|------------------|---------|
| Choline Chloride | CAS-No. |
|                  | 67-48-1 |

#### California Prop. 65 Components:

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.



## MATERIAL SAFETY DATA SHEET

Conforms to 93/112/EC and ISO 11014-1

Responsible Name: Diazyme Administration  
Effective: 4/29/13

### SODIUM AZIDE:

-----\Chemical Inventory Status - Part 1\-----  
Ingredient TSCA EC Japan Australia

Sodium Azide (26628-22-8) Yes Yes Yes Yes

-----\Chemical Inventory Status - Part 2\-----

-----Canada-----  
Ingredient Korea DSL NDSL Phil.

Sodium Azide (26628-22-8) Yes Yes No Yes

-----\Federal, State & International Regulations - Part 1\-----

-SARA 302- -----SARA 313-----  
Ingredient RQ TPQ List Chemical Catg.

Sodium Azide (26628-22-8) 1000 500 Yes No

-----\Federal, State & International Regulations - Part 2\-----

-RCRA- -TSCA-  
Ingredient CERCLA 261.33 8(d)

Sodium Azide (26628-22-8) 1000 P105 No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No

SARA 311/312: Acute: Yes Chronic: No Fire: Yes Pressure: No  
Reactivity: Yes (Pure / Solid)

### SECTION 16: OTHER INFORMATION

PREPARED BY: Diazyme Administration  
PHONE NO: 858-455-4768  
DATE PREPARED: 4/29/13

The information provided on this Material Safety Data Sheet is provided in the interest of promoting safe handling of the material. While this information is believed to be correct, Diazyme makes no warranty in respect to any of the information disclosed. Observe all federal, provincial, state and local laws concerning health and environmental pollution.