SECTION 1: Identification of the substance/mixture and of the company

1.1 Product identifier

- Product Name: **CREATININE – ENZYMATIC R1**

1.2 Relevant identified uses of the substance or mixture and uses advised against

- BioScien buffered Kinetic reagent for the in-vitro quantitative determination of creatinine in human serum, plasma, and urine on both manual and automated systems.

1.3 Details of the supplier of the safety data sheet

- Name of Manufacturer: Arena BioScien, SEA
- Address of Manufacturer: Block 5, Street 9 Ismailia free zone. Ismailia- Egypt
- Telephone: +202 21813500/ +201113102057
- Email: admin@arenabioscientific.com

SECTION 2 Hazards identification

-Primary Routes of Entry:

- Inhalation: Sodium hydroxide: burning sensation, cough, with a corrosive action to mucous membrane.
  Picric acid: irritation to the respiratory tract. Symptoms may include coughing, shortness of breath.
- Ingestion: Sodium hydroxide: abdominal pain, burning sensation; symptoms: sneezing, sore throat or runny nose. Severe pneumonitis is possible.
  Picric acid: irritation to gastrointestinal tract; symptoms: nausea, vomiting and diarrhea.
- Skin: Sodium hydroxide: may cause redness, pain or scarring is possible with greater exposure.
  Picric acid: causes irritation to skin, may cause allergic skin reactions, or can be absorbed through the skin with possible systemic effects.
- Eye contact: Sodium hydroxide: may cause redness, pain or blurred vision, severe deep burns, or blindness.
  Picric acid : may irritate eyes. Conjunctiva of the eye may also become yellow with corresponding yellow vision.
- Chronic Exposure: Sodium hydroxide: repeated / prolonged contact with skin can be destructive to tissue.
  Picric acid: prolonged/ repeated exposure can cause liver, kidney, and blood effects. Hair and skin may become yellow.
- Medical Conditions Aggravated by Exposure:
  Person with pre- existing (sodium hydroxide: skin disorders or eye problems or impaired respiratory function; picric acid: pre – existing skin, liver, blood and kidney disorders) may be more susceptible to the effects.
- Health Effects:
  The health effects from exposures to diluted forms of sodium hydroxide are not well documented. They are expected to be less severe than those for concentrated forms which are referenced in the descriptions.

SECTION 3 Composition/information on ingredients

3.1 Substances

Chemical Name	CAS #	% W/V	Exposure Limits in Air			
			ACGIH		OSHA	
			TLV	STEL	PEL	STEL
Picric acid	88-89-1	>1%	N/A	0.1 mg/m3c	0.1 mg/m3	N/A
Sodium hydroxide	1310-73-2	>1%	N/A	2 mg/m3c	2 mg/m3	N/A

SECTION 4 First aid measures

4.1 Description of first aid measures

- General

In case of doubt, or when symptoms persist, seek medical attention.
In general, this product is not hazardous to humans or animals, but like any other chemical, it should be treated with care, respect, and common sense.

- Contact with skin

Remove contaminated clothing.
Wash affected area with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/attention. Contaminated clothing should be laundered before reuse.

- Contact with eyes

If substance has gotten into eyes, immediately wash out with plenty of water for at least 15 minutes. Irrigate eyes thoroughly while lifting eyelids. Seek medical advice if necessary.

- Ingestion

Rinse mouth with water (do not swallow).
Never make an unconscious person vomit or drink fluids.
If medical advice is needed, have product container or label at hand.

- Inhalation

If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

SECTION 5 Fire-fighting measures

- Flash Point (Method used): N/A Flammable Limits – LEL: N/A UEL: N/A
- Extinguishing Media:

Use fire extinguishing media appropriate for site conditions.

-Special Fire Procedures:

Structural firefighting gear and self-contained breathing apparatus will provide adequate protection if this product is in a fire area.

-Unusual Fire and Explosion Hazards:

Sodium hydroxide: adding water to caustic solution generates large amount of heat.
Picric acid: explosive decomposition is likely if material is involved in a fire.

SECTION 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- Shut off all ignition sources.
- Use non-sparking hand tools.
- Avoid raising dust.
- Remove contaminated clothing.
- Wear protective clothing as per Section 8.
- Wash thoroughly after dealing with spillage.

6.2 Environmental Precautions

- Do not allow to enter public sewers and watercourses.
- Avoid scattering in the environment.

6.3 Methods and material for containment and cleaning up

- Absorb spillage in inert material and shovel up.
- Place in sealable container.
- Seal containers and label them.
- Ventilate the area and wash spill site after material pick-up is complete.
- Dispose of contaminated materials and wastes in accordance with local/national/international regulations.

SECTION 7 Handling and storage

7.1 Precautions for safe handling

- Do not breathe dust.
- Avoid contact with skin and eyes.
- Do not eat, drink, or smoke when using this product.
- Ensure adequate ventilation.
- Eyewash bottles should be available.
- Wash hands thoroughly after using this substance.

7.2 Conditions for safe storage, including any incompatibilities

- Storage temperature: see component label
- Store in a well-ventilated place. Keep container tightly closed.
- Store in a dry place.
- Keep away from: heat sources, acids.

SECTION 8 Exposure controls/personal protection

8.1 Control parameters

- There are no recommended or established controls for this product.

8.2 Exposure controls

- Eyewash bottles should be available.
- Engineering controls should be provided to prevent the need for ventilation.
- Respiratory protection is not required under normal use of this product. If respiratory protection is needed, follow OSHA respirator regulations (29CFR1910.134) and, if necessary, wear a NIOSH approved respirator. Select respirator based on its suitability to provide worker protection for given working conditions, level of airborne concentration, and presence of sufficient oxygen.- Wear protective gloves. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and standard EN 374.
- Wear safety glasses approved to standard for ANSI Z87 or EN 166.
- Wear suitable protective clothing in accordance with good chemical hygiene practices.



Gloves | Safety Glasses | Lab Coat

SECTION 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

- Appearance: Homogenous, free-flowing, liquid.
  Sodium hydroxide: Clear, Colourless liquid.
  Picric acid: Yellowish Colour liquid.
- Odor: No information available
- pH: N/A
- Melting point/Range: N/A
- Boiling Point/Range: N/A
- Flashpoint : No information available
- Evaporation Rate(nBuAc = 1): N/A
- Flammability: No information available
- Vapor Pressure, mm Hg @ 20oC: N/A

- Vapor Density(air = 1): N/A
- Specific Gravity (water = 1): N/A
- Solubility in water: Soluble

9.2 Other information

- No information available

SECTION 10 Stability and reactivity

10.1 Reactivity

- No information available

10.2 Chemical stability

- Considered stable under normal conditions.

10.3 Possibility of hazardous reactions

- No hazardous reactions known if used for its intended purpose.

10.4 Conditions to avoid:

Heat, moisture, incompatibles.

Picric acid: dangerous explosion hazard when dry. Becomes increasingly shock, heat, and friction sensitive as it loses its moisture.

10.5 Incompatible materials

- Sodium hydroxide : water, acid, flammable liquids, and metals (eg. Aluminium, tin , zinc).
- Picric acid: metals – copper, lead, zinc, aluminium + water, ammonia, concrete, plaster, salts, oxidizers.

10.6 Hazardous Decomposition Products

- Sodium hydroxide: reacts with acid and is corrosive in moist air to metals (e.g. Zinc, tin, lead) to form combustible hydrogen gas.
- Picric acid: explosive decomposition is likely if material is involved in a fire.

SECTION 11 Toxicological information

11.1 Information on toxicological effects

- Sodium hydroxide is considered a severe skin and eye irritant based on irritation data: skin, rabbit 500 mg / 24 hours ; eye, rabbit 50 micrograms/24 hours.
- Picric acid: LD50 (rat, oral)= 200 mg/kg. Investigated as mutagen.
- Carcinogenicity: N/A
- Reproductive effects:N/A.
- Target organ Effects:

Picric acid : eyes, skin, kidneys, liver, blood. Sodium hydroxide: skin, eyes, respiratory tract.

- Teratogenicity: No information available.

SECTION 12 Ecological information

12.1 Environmental Fate / Stability:

The sodium hydroxide solution may be hazardous to the environment, special attention should be given to water organisms.

12.2 Effect of Material on plants or animals: N/A

12.3 Effect of Chemical on Aquatic Life: N/A

SECTION 13 Disposal considerations

13.1 Waste treatment methods

- Disposal should be in accordance with local, regional, national, and/or international regulations.
- Do not discharge into drains or the environment, dispose to an authorized waste collection point.
- Do not reuse empty containers.

13.2 Classification (REACH)

- Waste Codes in accordance with the European Waste catalogue (EWC) are origin-defined. Since this product is used in several industries, no Waste Code can be provided by the supplier. The Waste Code should be determined in arrangement with your waste disposal partner or the responsible authority.

SECTION 14 Transport information

14.1 UN Number
- Not classified as hazardous for transport

14.2 UN Proper Shipping Name
- Not applicable

14.3 Transport hazard class(es)
- Not applicable

14.4 Packing group
- Not applicable

14.5 Environmental hazards
- Not Classified

14.6 Special precautions for user
- Not Classified

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code
- Not Classified

14.8 Domestic Surface Transport (US DOT)
- Proper Shipping Name: Not applicable
- DOT UN No.: Not applicable
- DOT Hazard Class: Not applicable
- DOT Packing Group: Not applicable

14.9 International Road/Rail (ADR/RID)
- Proper Shipping Name: Not applicable
- ADR UN No.: Not applicable
- ADR Hazard Class: Not applicable
- ADR Packing Group: Not applicable
- Tunnel Code: Not applicable

14.10 Ocean/Sea (IMO/IMDG)
- Proper Shipping Name: Not applicable
- IMDG UN No.: Not applicable
- IMDG Hazard Class: Not applicable
- IMDG Packing Group: Not applicable

14.11 Air (ICAO/IATA)
- Proper Shipping Name: Not applicable
- ICAO Un No.: Not applicable
- ICAO Hazard Class: Not applicable
- ICAO Packing Group: Not applicable

SECTION 15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- This Safety Data Sheet is provided in compliance with the EC Directive 1907/2006- 453/2010, WHMIS 2015 requirements as specified in the Hazardous Products Act (HPA) and the Hazardous Products Regulations (HPR), and with the OSHA Hazard Communication Standard 29 CFR 1910.1200.
- Regulation (EC) No. 1272/2008 on the classification, labelling and packaging of substances and mixtures (CLP Regulation) applies in Europe.

SECTION 16 Other information

Date of Preparation: September 2019
Revision: Rev. 0
Replaces: New issue
This document is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide. Arena BioScien Manufacturers, SEA. shall not be held liable for any damage resulting from handling or from contact with the above product. These suggestions should not be confused with state, municipal or insurance requirements, and constitute NO WARRANTY.

SECTION 1: Identification of the substance/mixture and of the company

1.1 Product identifier

- Product Name: **CREATININE – ENZYMATIC R2**

1.2 Relevant identified uses of the substance or mixture and uses advised against

- BioScien buffered Kinetic reagent for the in-vitro quantitative determination of creatinine in human serum, plasma, and urine on both manual and automated systems.

1.3 Details of the supplier of the safety data sheet

- Name of Manufacturer: Arena BioScien, SEA
- Address of Manufacturer: Block 5, Street 9 Ismailia free zone. Ismailia- Egypt
- Telephone: +202 21813500/ +201113102057
- Email: admin@arenabioscientific.com

SECTION 2 Hazards identification

-Primary Routes of Entry:

- Inhalation: Sodium hydroxide: burning sensation, cough, with a corrosive action to mucous membrane.
  Picric acid: irritation to the respiratory tract. Symptoms may include coughing, shortness of breath.
- Ingestion: Sodium hydroxide: abdominal pain, burning sensation; symptoms: sneezing, sore throat or runny nose. Severe pneumonitis is possible.
  Picric acid: irritation to gastrointestinal tract; symptoms: nausea, vomiting and diarrhea.
- Skin: Sodium hydroxide: may cause redness, pain or scarring is possible with greater exposure.
  Picric acid: causes irritation to skin, may cause allergic skin reactions, or can be absorbed through the skin with possible systemic effects.
- Eye contact: Sodium hydroxide: may cause redness, pain or blurred vision, severe deep burns, or blindness.
  Picric acid : may irritate eyes. Conjunctiva of the eye may also become yellow with corresponding yellow vision.
- Chronic Exposure: Sodium hydroxide: repeated / prolonged contact with skin can be destructive to tissue.
  Picric acid: prolonged/ repeated exposure can cause liver, kidney, and blood effects. Hair and skin may become yellow.
- Medical Conditions Aggravated by Exposure:
  Person with pre- existing (sodium hydroxide: skin disorders or eye problems or impaired respiratory function; picric acid: pre – existing skin, liver, blood and kidney disorders) may be more susceptible to the effects.
- Health Effects:
  The health effects from exposures to diluted forms of sodium hydroxide are not well documented. They are expected to be less severe than those for concentrated forms which are referenced in the descriptions.

SECTION 3 Composition/information on ingredients

3.1 Substances

Chemical Name	CAS #	% W/V	Exposure Limits in Air			
			ACGIH		OSHA	
			TLV	STEL	PEL	STEL
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Sodium hydroxide	1310-73-2	>1%	N/A	2 mg/m3c	2 mg/m3	N/A

SECTION 4 First aid measures

4.1 Description of first aid measures

- General

In case of doubt, or when symptoms persist, seek medical attention.
In general, this product is not hazardous to humans or animals, but like any other chemical, it should be treated with care, respect, and common sense.

- Contact with skin

Remove contaminated clothing.
Wash affected area with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/attention. Contaminated clothing should be laundered before reuse.

- Contact with eyes

If substance has gotten into eyes, immediately wash out with plenty of water for at least 15 minutes. Irrigate eyes thoroughly while lifting eyelids. Seek medical advice if necessary.

- Ingestion

Rinse mouth with water (do not swallow).
Never make an unconscious person vomit or drink fluids.
If medical advice is needed, have product container or label at hand.

- Inhalation

If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

SECTION 5 Fire-fighting measures

- Flash Point (Method used): N/A Flammable Limits – LEL: N/A UEL: N/A
- Extinguishing Media:

Use fire extinguishing media appropriate for site conditions.

-Special Fire Procedures:

Structural firefighting gear and self-contained breathing apparatus will provide adequate protection if this product is in a fire area.

-Unusual Fire and Explosion Hazards:

Sodium hydroxide: adding water to caustic solution generates large amount of heat.
Picric acid: explosive decomposition is likely if material is involved in a fire.

SECTION 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- Shut off all ignition sources.
- Use non-sparking hand tools.
- Avoid raising dust.
- Remove contaminated clothing.
- Wear protective clothing as per Section 8.
- Wash thoroughly after dealing with spillage.

6.2 Environmental Precautions

- Do not allow to enter public sewers and watercourses.
- Avoid scattering in the environment.

6.3 Methods and material for containment and cleaning up

- Absorb spillage in inert material and shovel up.
- Place in sealable container.
- Seal containers and label them.
- Ventilate the area and wash spill site after material pick-up is complete.
- Dispose of contaminated materials and wastes in accordance with local/national/international regulations.

SECTION 7 Handling and storage

7.1 Precautions for safe handling

- Do not breathe dust.
- Avoid contact with skin and eyes.
- Do not eat, drink, or smoke when using this product.
- Ensure adequate ventilation.
- Eyewash bottles should be available.
- Wash hands thoroughly after using this substance.

7.2 Conditions for safe storage, including any incompatibilities

- Storage temperature: see component label
- Store in a well-ventilated place. Keep container tightly closed.
- Store in a dry place.
- Keep away from: heat sources, acids.

SECTION 8 Exposure controls/personal protection

8.1 Control parameters

- There are no recommended or established controls for this product.

8.2 Exposure controls

- Eyewash bottles should be available.
- Engineering controls should be provided to prevent the need for ventilation.
- Respiratory protection is not required under normal use of this product. If respiratory protection is needed, follow OSHA respirator regulations (29CFR1910.134) and, if necessary, wear a NIOSH approved respirator. Select respirator based on its suitability to provide worker protection for given working conditions, level of airborne concentration, and presence of sufficient oxygen.- Wear protective gloves. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and standard EN 374.
- Wear safety glasses approved to standard for ANSI Z87 or EN 166.
- Wear suitable protective clothing in accordance with good chemical hygiene practices.



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SECTION 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

- Appearance: Homogenous, free-flowing, liquid.
  Sodium hydroxide: Clear, Colourless liquid.
  Picric acid: Yellowish Colour liquid.
- Odor: No information available
- pH: N/A
- Melting point/Range: N/A
- Boiling Point/Range: N/A
- Flashpoint : No information available
- Evaporation Rate(nBuAc = 1): N/A
- Flammability: No information available
- Vapor Pressure, mm Hg @ 20oC: N/A

- Vapor Density(air = 1): N/A
- Specific Gravity (water = 1): N/A
- Solubility in water: Soluble

9.2 Other information

- No information available

SECTION 10 Stability and reactivity

10.1 Reactivity

- No information available

10.2 Chemical stability

- Considered stable under normal conditions.

10.3 Possibility of hazardous reactions

- No hazardous reactions known if used for its intended purpose.

10.4 Conditions to avoid:

Heat, moisture, incompatibles.

Picric acid: dangerous explosion hazard when dry. Becomes increasingly shock, heat, and friction sensitive as it loses its moisture.

10.5 Incompatible materials

- Sodium hydroxide : water, acid, flammable liquids, and metals (eg. Aluminium, tin , zinc).
- Picric acid: metals – copper, lead, zinc, aluminium + water, ammonia, concrete, plaster, salts, oxidizers.

10.6 Hazardous Decomposition Products

- Sodium hydroxide: reacts with acid and is corrosive in moist air to metals (e.g. Zinc, tin, lead) to form combustible hydrogen gas.
- Picric acid: explosive decomposition is likely if material is involved in a fire.

SECTION 11 Toxicological information

11.1 Information on toxicological effects

- Sodium hydroxide is considered a severe skin and eye irritant based on irritation data: skin, rabbit 500 mg / 24 hours ; eye, rabbit 50 micrograms/24 hours.
- Picric acid: LD50 (rat, oral)= 200 mg/kg. Investigated as mutagen.
- Carcinogenicity: N/A
- Reproductive effects:N/A.
- Target organ Effects:

Picric acid : eyes, skin, kidneys, liver, blood. Sodium hydroxide: skin, eyes, respiratory tract.

- Teratogenicity: No information available.

SECTION 12 Ecological information

12.1 Environmental Fate / Stability:

The sodium hydroxide solution may be hazardous to the environment, special attention should be given to water organisms.

12.2 Effect of Material on plants or animals: N/A

12.3 Effect of Chemical on Aquatic Life: N/A

SECTION 13 Disposal considerations

13.1 Waste treatment methods

- Disposal should be in accordance with local, regional, national, and/or international regulations.
- Do not discharge into drains or the environment, dispose to an authorized waste collection point.
- Do not reuse empty containers.

13.2 Classification (REACH)

- Waste Codes in accordance with the European Waste catalogue (EWC) are origin-defined. Since this product is used in several industries, no Waste Code can be provided by the supplier. The Waste Code should be determined in arrangement with your waste disposal partner or the responsible authority.

SECTION 14 Transport information

14.1 UN Number
- Not classified as hazardous for transport

14.2 UN Proper Shipping Name
- Not applicable

14.3 Transport hazard class(es)
- Not applicable

14.4 Packing group
- Not applicable

14.5 Environmental hazards
- Not Classified

14.6 Special precautions for user
- Not Classified

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code
- Not Classified

14.8 Domestic Surface Transport (US DOT)
- Proper Shipping Name: Not applicable
- DOT UN No.: Not applicable
- DOT Hazard Class: Not applicable
- DOT Packing Group: Not applicable

14.9 International Road/Rail (ADR/RID)
- Proper Shipping Name: Not applicable
- ADR UN No.: Not applicable
- ADR Hazard Class: Not applicable
- ADR Packing Group: Not applicable
- Tunnel Code: Not applicable

14.10 Ocean/Sea (IMO/IMDG)
- Proper Shipping Name: Not applicable
- IMDG UN No.: Not applicable
- IMDG Hazard Class: Not applicable
- IMDG Packing Group: Not applicable

14.11 Air (ICAO/IATA)
- Proper Shipping Name: Not applicable
- ICAO Un No.: Not applicable
- ICAO Hazard Class: Not applicable
- ICAO Packing Group: Not applicable

SECTION 15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- This Safety Data Sheet is provided in compliance with the EC Directive 1907/2006- 453/2010, WHMIS 2015 requirements as specified in the Hazardous Products Act (HPA) and the Hazardous Products Regulations (HPR), and with the OSHA Hazard Communication Standard 29 CFR 1910.1200.
- Regulation (EC) No. 1272/2008 on the classification, labelling and packaging of substances and mixtures (CLP Regulation) applies in Europe.

SECTION 16 Other information

Date of Preparation: September 2019
Revision: Rev. 0
Replaces: New issue
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