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

1.1 Product identifier

- Product Name: **Ammonia R1**

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

- This reagent is used to determine the content of ammonia in human serum and plasma.

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

Classification of the substance or mixture
Gases under pressure: Liquefied gas
Flammable gases, Category 2
Skin corrosion, Sub-category 1B
Acute toxicity - Category 3,
Inhalation Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1

Label elements

Signal: word
Hazard statement(s)
H221 Flammable gas Danger
H225 Highly Flammable liquid and vapour
H280 Contains gas under pressure; may explode if heated
H301 Toxic if swaloed 1 Chemical Book
H301 Toxic if swaloed
H302 Harmful if swalowed
H303 May be harmfulif swalowed
H311 Toxic in contact with skin
H314 Causes severe skin burns and eye damage
H315 Causes skin irritation
H318 Causes serious eye damage
H319 Causes serious eye irritation
H331 Toxic if inhaled
H334 May cause alergy or asthma symptoms or breathing difficulties if inhaled
H335 May cause respiratory irritation
H336 May cause drowsiness or dizziness
H340 May cause genetic defects
H341 Suspected of causing genetic defects
H351 Suspected of causing cancer
H360 May damage fertility or the unborn child
H361 Suspected of damaging fertility or the unborn child
H370 Causes damage to organs
H372 Causes damage to organs through prolonged or repeated exposure
H373 May cause damage to organs through prolonged or repeated exposure
H401 Toxic to aquatic life
H410 Very toxic to aquatic life with long lasting effects
H411 Toxic to aquatic life with long lasting effects
H412 Harmful to aquatic life with long lasting effects
Precautionary statement(s)
P201 Obtain special instructions before use.
P202 Do not handle until al safety precautions have been read and understood.
P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 Wash hands thoroughly after handling.
P264 Wash skin thouroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a wel-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P281 Use personal protective equipment as required.
P284 Wear respiratory protection.
P310 Immediately ca l a POISON CENTER or doctor/physician.
P311 Cal a POISON CENTER or doctor/physician.
P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P391 Colect spilage. Hazardous to the aquatic environment 2 Chemical Book
P301+P310 IF SWALLOWED: Immediately cal a POISON CENTER or doctor/physician.
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off Immediately al contaminated clothing. Rinse SKIN with water/shower.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continuerinsing.
P307+P311 IF exposed: cal a POISON CENTER or doctor/physician.
P370+P378 In case of fire: Use … for extinction.
P403 Store in a wel-ventilated place.
P405 Store locked up.
P403+P233 Store in a wel-ventilated place. Keep container tightly closed.
P403+P235 Store in a wel-ventilated place. Keep cool. Prevention
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash ... thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P271 Use only outdoors or in a wel-ventilated area.
P273 Avoid release to the environment.
Response
P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 In case of leakage, eliminate a l ignition sources.
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P363 Wash contaminated clothing before reuse.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P316 Get emergency medical help immediately.
P321 Specific treatment (see ... on this label).
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P391 Colect spilage.
Storage
P410+P403 Protect from sunlight. Store in a we l-ventilated place.
P403 Store in a wel-ventilated place.
P405 Store locked up.
P403+P233 Store in a wel-ventilated place. Keep container tightly closed.
Disposal
P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal. Other hazards no data available

SECTION 3 Composition/information on ingredients

Product name:Ammonia
Synonyms: ammonia,NH3
CAS: 7664-41-7
EC number: 231-635-3
MF: H3N
MW : 17.03

SECTION 4 First aid measures

Description of first aid measures

If inhaled

Fresh air, rest. Half-upright position. Administration of oxygen may be needed. Refer immediately for medical attention.

Following skin contact

Rinse skin with plenty of water or shower for at least 15 minutes. ON FROSTBITE: rinse with plenty of water, do NOT remove clothes. Refer immediately for medical attention .

Following eye contact

Rinse with plenty of water for several minutes (remove contact lenses if easily possible). Refer immediately for medical attention.

Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Cal a doctor or Poison Control Center immediately.

Most important symptoms and effects, both acute and delayed

Excerpt from ERG Guide 125 [Gases - Corrosive]: TOXIC; may be fatal if inhaled, ingested or absorbed through skin. Vapors are extremely irritating and corrosive. Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite. Fire wi l produce irritating, corrosive and/or toxic gases. Runoff from fire control may cause po lution. (ERG, 2016) Vapors cause irritation of eyes and respiratory tract. Liquid wi l burn skin and eyes. Poisonous; may be fatal if inhaled. Contact may cause burns to skin and eyes. Contact with liquid may cause frostbite. (EPA, 1998) Excerpt from ERG Guide 154 [Substances - Toxic and/or Corrosive (Non-Combustible)]: TOXIC; inhalation, ingestion or skin contact with material may cause severe injury or death. Contact with molten substance may cause severe burns to skin and eyes. Avoid any skin contact. Effects of contact or inhalation may be delayed. Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may be corrosive and/or toxic and cause polution. (ERG, 2016)

Indication of any immediate medical attention and special treatment needed

Inhalation of ammonia gas: Observe carefu ly for signs of progressive upper airway obstruction, and intubate early if necessary. Administer humidified supplemental oxygen and bronchodilators for wheezing. Treat noncardiogenic pulmonary edema if it occurs. Asymptomatic or mildly symptomatic patients may be discharged after a brief observation period. Ingestion of aqueous solution: If a solution of 10% or greater has been ingested or if ther are any symptoms of corrosive injury (dysphagia, drooling, or pain), perform flexible endoscopy to evaluate for serious esophageal or gastric injury. Obtain chest and abdominal radiograph to look for mediastinal or abdominal free air, which suggests esophageal or gastrointestinal perforation. Eye exposure: After eye irrigation, perform fluorescein examination and refer the patient to an ophthalmologist if there is evidence of corneal injury.

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.

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

Physical state Liquid
Colour Colorless
Odour Sharp, cloying, repe lent
Melting point/freezing point-77.7 °C. Atm. press.:1 013 mBar.
Boiling point or initial boiling point and boiling range 33.4 °C. Atm. press.:1 013 mBar. Remarks:Ammonia, anhydrous.;> 48 - < 60 °C. Atm. press.:> 1 013 mBar. Remarks:Water solution with.
Flammability Flammable. Cylinder may explode in heat of fire.
Lower and upper explosion limit/flammability limit 25%
Flash point 132°C
Auto-ignition temperature 651 °C. Atm. press.:1 013 mBar.
Decomposition temperature no data available
pH pH of 1.0N aqueous solution 11.6; 0.1N aqueous solution 11.1; 0.01N aqueous solution 10.6
Kinematic viscosity dynamic viscosity (in mPa s) = 0.7. Temperature:48.9°C.;dynamic viscosity (in mPa s) = 5. Temperature:-40.0°C.
Solubility Miscible with ethanol (95%) and water.
Partition coefficient n-octanol/water log Kow = -2.66 /estimate for ammonium hydroxide which is the form of ammonia in water/
Vapour pressure 8.75 atm (21 °C)
Density and/or relative density 0.771 kg/m3. Temperature:0 °C.
Relative vapour density 0.6 (vs air)
Particle characteristics no data 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: **Ammonia R2**

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

- This reagent is used to determine the content of ammonia in human serum and plasma.

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

Classification of the substance or mixture
Gases under pressure: Liquefied gas
Flammable gases, Category 2
Skin corrosion, Sub-category 1B
Acute toxicity - Category 3,
Inhalation Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1

Label elements

Signal: word
Hazard statement(s)
H221 Flammable gas Danger
H225 Highly Flammable liquid and vapour
H280 Contains gas under pressure; may explode if heated
H301 Toxic if swaloed 1 Chemical Book
H301 Toxic if swaloed
H302 Harmful if swalowed
H303 May be harmfulif swalowed
H311 Toxic in contact with skin
H314 Causes severe skin burns and eye damage
H315 Causes skin irritation
H318 Causes serious eye damage
H319 Causes serious eye irritation
H331 Toxic if inhaled
H334 May cause alergy or asthma symptoms or breathing difficulties if inhaled
H335 May cause respiratory irritation
H336 May cause drowsiness or dizziness
H340 May cause genetic defects
H341 Suspected of causing genetic defects
H351 Suspected of causing cancer
H360 May damage fertility or the unborn child
H361 Suspected of damaging fertility or the unborn child
H370 Causes damage to organs
H372 Causes damage to organs through prolonged or repeated exposure
H373 May cause damage to organs through prolonged or repeated exposure
H401 Toxic to aquatic life
H410 Very toxic to aquatic life with long lasting effects
H411 Toxic to aquatic life with long lasting effects
H412 Harmful to aquatic life with long lasting effects
Precautionary statement(s)
P201 Obtain special instructions before use.
P202 Do not handle until al safety precautions have been read and understood.
P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 Wash hands thoroughly after handling.
P264 Wash skin thouroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a wel-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P281 Use personal protective equipment as required.
P284 Wear respiratory protection.
P310 Immediately ca l a POISON CENTER or doctor/physician.
P311 Cal a POISON CENTER or doctor/physician.
P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P391 Colect spilage. Hazardous to the aquatic environment 2 Chemical Book
P301+P310 IF SWALLOWED: Immediately cal a POISON CENTER or doctor/physician.
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off Immediately al contaminated clothing. Rinse SKIN with water/shower.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continuerinsing.
P307+P311 IF exposed: cal a POISON CENTER or doctor/physician.
P370+P378 In case of fire: Use … for extinction.
P403 Store in a wel-ventilated place.
P405 Store locked up.
P403+P233 Store in a wel-ventilated place. Keep container tightly closed.
P403+P235 Store in a wel-ventilated place. Keep cool. Prevention
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash ... thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P271 Use only outdoors or in a wel-ventilated area.
P273 Avoid release to the environment.
Response
P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 In case of leakage, eliminate a l ignition sources.
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P363 Wash contaminated clothing before reuse.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P316 Get emergency medical help immediately.
P321 Specific treatment (see ... on this label).
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P391 Colect spilage.
Storage
P410+P403 Protect from sunlight. Store in a we l-ventilated place.
P403 Store in a wel-ventilated place.
P405 Store locked up.
P403+P233 Store in a wel-ventilated place. Keep container tightly closed.
Disposal
P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal. Other hazards no data available

SECTION 3 Composition/information on ingredients

Product name:Ammonia
Synonyms: ammonia,NH3
CAS: 7664-41-7
EC number: 231-635-3
MF: H3N
MW : 17.03

SECTION 4 First aid measures

Description of first aid measures

If inhaled

Fresh air, rest. Half-upright position. Administration of oxygen may be needed. Refer immediately for medical attention.

Following skin contact

Rinse skin with plenty of water or shower for at least 15 minutes. ON FROSTBITE: rinse with plenty of water, do NOT remove clothes. Refer immediately for medical attention .

Following eye contact

Rinse with plenty of water for several minutes (remove contact lenses if easily possible). Refer immediately for medical attention.

Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Cal a doctor or Poison Control Center immediately.

Most important symptoms and effects, both acute and delayed

Excerpt from ERG Guide 125 [Gases - Corrosive]: TOXIC; may be fatal if inhaled, ingested or absorbed through skin. Vapors are extremely irritating and corrosive. Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite. Fire wi l produce irritating, corrosive and/or toxic gases. Runoff from fire control may cause po lution. (ERG, 2016) Vapors cause irritation of eyes and respiratory tract. Liquid wi l burn skin and eyes. Poisonous; may be fatal if inhaled. Contact may cause burns to skin and eyes. Contact with liquid may cause frostbite. (EPA, 1998) Excerpt from ERG Guide 154 [Substances - Toxic and/or Corrosive (Non-Combustible)]: TOXIC; inhalation, ingestion or skin contact with material may cause severe injury or death. Contact with molten substance may cause severe burns to skin and eyes. Avoid any skin contact. Effects of contact or inhalation may be delayed. Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may be corrosive and/or toxic and cause polution. (ERG, 2016)

Indication of any immediate medical attention and special treatment needed

Inhalation of ammonia gas: Observe carefu ly for signs of progressive upper airway obstruction, and intubate early if necessary. Administer humidified supplemental oxygen and bronchodilators for wheezing. Treat noncardiogenic pulmonary edema if it occurs. Asymptomatic or mildly symptomatic patients may be discharged after a brief observation period. Ingestion of aqueous solution: If a solution of 10% or greater has been ingested or if ther are any symptoms of corrosive injury (dysphagia, drooling, or pain), perform flexible endoscopy to evaluate for serious esophageal or gastric injury. Obtain chest and abdominal radiograph to look for mediastinal or abdominal free air, which suggests esophageal or gastrointestinal perforation. Eye exposure: After eye irrigation, perform fluorescein examination and refer the patient to an ophthalmologist if there is evidence of corneal injury.

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.

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

Physical state Liquid
Colour Colorless
Odour Sharp, cloying, repe lent
Melting point/freezing point-77.7 °C. Atm. press.:1 013 mBar.
Boiling point or initial boiling point and boiling range 33.4 °C. Atm. press.:1 013 mBar. Remarks:Ammonia, anhydrous.;> 48 - < 60 °C. Atm. press.:> 1 013 mBar. Remarks:Water solution with.
Flammability Flammable. Cylinder may explode in heat of fire.
Lower and upper explosion limit/flammability limit 25%
Flash point 132°C
Auto-ignition temperature 651 °C. Atm. press.:1 013 mBar.
Decomposition temperature no data available
pH pH of 1.0N aqueous solution 11.6; 0.1N aqueous solution 11.1; 0.01N aqueous solution 10.6
Kinematic viscosity dynamic viscosity (in mPa s) = 0.7. Temperature:48.9°C.;dynamic viscosity (in mPa s) = 5. Temperature:-40.0°C.
Solubility Miscible with ethanol (95%) and water.
Partition coefficient n-octanol/water log Kow = -2.66 /estimate for ammonium hydroxide which is the form of ammonia in water/
Vapour pressure 8.75 atm (21 °C)
Density and/or relative density 0.771 kg/m3. Temperature:0 °C.
Relative vapour density 0.6 (vs air)
Particle characteristics no data 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

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