SECTION 1. IDENTIFICATION OF THE HAZARDOUS CHEMICAL AND THE MANUFACTURER

1.1. Name of the hazardous chemical	Sodium Hydroxide
1.2. Other means of identification	Commercial name: IQUISA Sodium hydroxide, Solid Formula: 98% NaOH
1.3. Recommended use of the hazardous chemical or mixture, and restrictions on use	**Recommended uses:** Chemical manufactures, synthetic textiles, soaps and detergents, chemical products, paper and cellulose, water treatment, aluminum, petroleum refining, purification of vegetable and mineral oils, glass, neutralization, resin regeneration. **Uses not recommended:** Private consumption. Industrial use. No non-recommended uses have been detected, provided that the indications contemplated in this Safety Data Sheet are complied with.

1.4. Supplier or manufacturer data	**1.5. Telephone number in case of emergency**
INDUSTRIA QUÍMICA DEL ISTMO, S.A DE C.V. Coatzacoalcos Plant Pajaritos Industrial Complex Between Avenue 4 and 5 Coatzacoalcos, Veracruz Zip Code 96400 Web site: **www.iquisa.com.mx**	**SETIQ:** +52 800 00 21400; 55 5559 1588; Cell phone +52 55 4362 1498 Coatzacoalcos Plant: +52 921 211 3428 CHEMTREC: 800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

2.1. Classification of the hazardous chemical

GHS-MX Classification
Substances and mixtures corrosive to metals, Category 1
Skin corrosion / irritation, Category 1
Serious eye damage / eye irritation, Category 1

2.2. Signs, including precautionary statements and caution pictograms

GHS-MX pictograms

Signal Word: **DANGER**

Hazard statements: May be corrosive to metals, Harmuful if swallowe, Causes severe skin burns and eye damage.

Preacautionary statements:

Prevention: Read the label before use, Do not handle until all safety precautions have been read and understood, Keep only in the original packaging, Do not get in eyes, on skin or on clothing, Wash hands throughly after handling, Do not eat, drink or smoke while using this product, Avoid release to the environment, Wear protective gloves / protective clothing / eye protection / face protection, Keep out of reach of children, Do not breathe dust / fume / gas /mist / vapors /spray.

First Aids:

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Call a poison center or doctor/physician if you feel unwell
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water / shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

Storage: Store locked up, Store in a corrosive resistant container with a resistant inner liner.

Response: Absorb spillage to prevent material-damage.

Disposal: Dispose of content and/or container in accordance with local, regional, national and international regulations.

2.3. Other hazards that do not lead to a classification: None

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1. Chemical identity of the substance	Chemical name: Sodium Hydroxide, Sodium Hydrate.
3.2. Common name, synonyms of the dangerous chemical substance or mixture	Common Name: Caustic Soda Trade name: IQUISA Sodium hydroxide, Solid
3.3. CAS number, UN number, among others.	CAS number: 1310-73-2 UN number: 1823
3.4. Stabilizing impurities and additives that are themselves classified and that contribute to the classification of the substance	Does not apply

SECTION 4. FIRST AID

4.1. Description of first aid measures

General measures:
Avoid exposure to the product, taking adequate protection measures. Consult the doctor, taking the safety data sheet with you.

• Before any action, use the appropriate personal protective equipment for the corresponding risk.
• Remove the person from the exposure area and remove all contaminated clothing with appropriate personal protective equipment if necessary under a shower with plenty of fresh, running water.
• Recover clothing and handle it as hazardous waste, taking care not to contaminate clean areas.
• Keep the person calm and in a comfortable position, warm them and encourage slow and deep breathing, in all cases secure C, A, B.
• In case of respiratory arrest, provide rescue breathing with a ventilation every 6 seconds ensuring the elevation of the patient's chest, use barrier devices connected to an oxygen source, in all cases avoid mouth-to-mouth respiration. (medical attention according to current AHA protocols).
• In case of cardiorespiratory arrest, begin cardiopulmonary resuscitation maneuvers, with two ventilations for 30 chest compressions, always with a barrier device connected to an oxygen source; in all cases avoid mouth-to-mouth respiration, (medical attention according to the current AHA protocols).

Ingestion:
Do not induce vomiting. If the injured person is unconscious, treat as in the case of inhalation. If conscious, give one tablespoon of water to drink immediately and every 10 minutes thereafter. In all cases of exposure, the patient should be transported to the hospital as soon as possible.

Inhalation:
Remove from the exhibition area to a well ventilated area. If the injured person is unconscious, do not give anything to drink, give artificial respiration and cardiopulmonary rehabilitation. If conscious, lift or sit slowly, give oxygen, if necessary

Skin contact:
Remove contaminated clothing immediately. Wash the affected area with plenty of running water for at least 30 minutes. if irritation persists, repeat rinsing. In case of burns get medical attention.
If available, apply DIPHOTERINE in spray or solution in the contaminated area according to its instructions for use.

Eye contact:
Wash with plenty of running water for a minimum of 15 minutes, making sure to lift the eyelids, until the product is completely eliminated.

	If you have contact lenses, remove them after the first 5 minutes and then continue rinsing your eyes. Seek medical advice. It can cause serious damage to the cornea, conjunctiva or other parts of the eye. If available, apply a full bottle of DIPHOTERINE to each injured eye, then apply a full bottle of AFTER WASCH solution to each injured eye according to its instructions for use**.**
4.2. Most important symptoms and effects, acute or chronic	Sodium hydroxide is classified as corrosive and can cause mild to severe irritation to the eyes, mucous membranes (nose, throat, and lungs), and skin. Exposure can occur both by direct contact with aqueous caustic solutions or entrained mists and aerosols. The degree of irritation or cell damage is related to the concentration and temperature of the hydroxide solution and the duration of exposure. **Ingestion:** It causes severe burns in the mouth, if swallowed the damage is also in the esophagus causing vomiting and collapse. It can cause hypotension, tachycardia, tachypnea and rarely fever. **Inhalation:** Inhalation of dust or mist causes irritation and damage to the respiratory tract, can cause coughing and bronchospasm. In case of exposure to high concentrations, nasal ulceration occurs. At a concentration of 0.005-0.7 mg / m3, burns to the nose and tract have been reported. In animal studies, serious damage to the respiratory tract has been reported after chronic exposure. **Skin contact:** Both solid sodium hydroxide and concentrated solutions are highly corrosive to the skin. It can cause irritation to full thickness burns. Metabolic acidosis can develop. **Eye contact:** Solid sodium hydroxide is extremely corrosive to the eyes, so splashes are very dangerous, they can cause great irritation in the cornea, ulceration, cloudiness and finally, its disintegration. In more severe cases there may be permanent blindness, so immediate first aid is vital.
4.3. Indication of the need for immediate medical attention and, where appropriate, special treatment	**Information for the doctor:** **Inhalation:** If there is difficulty in breathing, give oxygen, do not move the victim unnecessarily, symptoms of pulmonary edema appear after 48 hr. **Skin contact:** Wash the affected part with warm water for 30 minutes, apply a cream if necessary. **Eye contact:** Remove the soda from the eyes by flushing with warm water with the eyelid open for 30 minutes, use a neutral alkaline solution, do not interrupt the washing with water. **Ingestion:** Do not give to drink liquids, if the victim is unconscious or has seizures, in case of accidental ingestion do not induce vomiting, drink 300 ml of water or milk (after water). If natural vomiting occurs repeat the administration of water. **Antidote (if any):** Use edible vinegar as a neutralizer in the case of contact with the skin, after having washed the affected part.

SECTION 5. FIRE FIGHTING MEASURES

5.1. Suitable extinguishing media	Use extinguishing media suitable for surrounding fire. Use dry chemical, foam, sand, or CO_2. If water is used, care must be taken as it can generate heat and cause splashing if applied directly to sodium hydroxide.
5.2. Specific hazards of the chemical	Sodium hydroxide does not burn or support combustion. The reaction of sodium hydroxide with water and several common materials can generate enough heat to ignite nearby combustible materials.

	Sodium hydroxide can react with metals such as aluminum, tin, and zinc to form flammable hydrogen gas. The product and its packaging that burn in closed spaces for long periods can produce amounts of carbon monoxide that reach the lower explosive limit (carbon monoxide LEL = 12.5% in air). It can produce toxic fumes and gases in case of combustion, and generate toxic residues with the extinguishing water. Under certain conditions, any airborne dust can be an explosion hazard.
5.3. Special measures to be followed by fire fighting groups	**Special fire fighting measures:** Evacuate the area and control the fire from a safe distance or protected location. Approach the fire with the wind in your favor. If possible, isolate materials not involved in the fire and protect personnel. Move containers from fire area if it can be done without risk. Spray packages with water to prevent ignition if exposed to excessive heat or fire. Remove the packaging if it has not yet been hit by the flames, and you can do it without risk. Cool packages with water long after fire is out, stirring debris to remove embers. Prevent water used for fire control or dilution from entering water courses, drains, or springs. Water can be used with extreme caution to extinguish a fire in an area where sodium hydroxide is stored. The water must not come into contact with the sodium hydroxide. Water can be used in flooding amounts as mist or mist to keep fire exposed containers cool and absorb heat. At high temperatures vapors can be generated which produce a strong and corrosive gas. Do not enter without using specialized protective equipment appropriate for the situation. **Special protective equipment to be worn by firefighters:** If there is a risk of contact with the product, normal protective clothing for firefighters may not provide adequate protection. Chemical resistant clothing (ie chemical splash suit) and positive pressure self-contained breathing apparatus (MSHA / NIOSH approved or equivalent) may be required. Chemical protective clothing can provide little or no thermal protection. Every emergency must be evaluated before you deal with it.

SECTION 6. ACTION TO BE TAKEN IN CASE OF ACCIDENTAL RELEASE OR SPILL

6.1. Personal precautions, protective equipment and emergency procedures	Eliminate all sources of ignition (no smoking, no flares, sparks or flames in the danger area). Do not touch damaged containers or spilled material, unless you are wearing appropriate protective clothing. Stop leak or spill if you can do it without risk. Prevent entry into waterways, sewers, basements, or confined areas. Absorb with dry earth, sand or other non-combustible absorbent material and transfer to containers. Do not get water inside containers. Deactivation Chemistry: Weak acid solutions (vinegar, sulfuric or hydrochloric acid).
6.2. Environmental precautions	Make sure cleaning is done by trained personnel. **Waste Disposal:** Dispose of waste material at an approved waste treatment and disposal facility in accordance with applicable regulations. Do not dispose of waste in normal trash or drainage systems. Contaminated cleaning material should be considered a hazardous waste.
6.3. Methods and materials for containment and clean-up of spills or leaks	Scoop up the product and place it in a suitable container. Sweep or vacuum avoiding the dispersion of dust. It may be necessary to moisten it slightly. Clean or thoroughly wash the contaminated area. Dispose of the water and the waste collected in marked containers for disposal as chemical waste. Dispose of waste according to current environmental regulations; Do not dispose of them in drainage systems.

SECTION 7. HANDLING AND STORAGE

7.1. Precautions to be taken to ensure safe handling	Eating, drinking or smoking is prohibited during handling. Avoid contact with eyes, skin and clothing. Wash arms, hands, and nails after handling this product. The use of gloves is recommended. Facilitate access to emergency showers and eyewashes. Avoid inhalation of

	the product. Keep containers closed when not in use. Use the smallest amounts possible in designated areas with adequate ventilation. Handle containers with care. Have emergency equipment readily available (for fires, spills, leaks, etc.) Make sure all containers are labeled. Wear appropriate personal protective equipment. The product is NOT compatible with clothing or leather goods. People who work with this chemical must be adequately trained regarding its hazards and its safe use. Empty containers may contain hazardous waste. Avoid generating mists. Transfer solutions using equipment that is corrosion resistant. With caution transfer to strong containers made of compatible materials. Never return contaminated material to its original container. Considerable heat is generated when diluted in water. Proper handling procedures should be followed to avoid severe boiling, splashing, or violent eruption of the diluted solution. Never add water to a caustic. ALWAYS ADD CAUSTIC TO WATER and shake. When mixing with water, slowly add small amounts. Use cold water to avoid generating excessive heat.
7.2. Conditions for safe storage, including any incompatibilities	Store in a cool, dry, well-ventilated area. Keep Containers tightly closed when not in use and when empty. Protect the bags from damage. Protect from the sun. Periodically review the containers to detect losses and breakages. Do not place the bags directly on damp floors. Use pallets for stacking. Keep the product in the container supplied by the manufacturer. Store away from incompatible materials such as strong acids, nitroaromatic, nitroparaffinic or organohalogen compounds. Do not store next to aluminum or magnesium. Use corrosion resistant structural materials and lighting and ventilation systems in the storage area. Containers made of nickel alloys are preferable. Steel containers are acceptable if temperatures are not raised. Nickel is the preferred metal for handling this product. Plastic coated steel or plastics, or FRP vinyl deraquene ester resin tanks may be suitable. Container contents may develop pressure after prolonged storage. Install precautionary notices where you inform the risks and the obligation to use personal protective equipment. STORAGE TEMPERATURE: Avoid freezing. Do not store in temperatures above 40 ° C (104 ° F).

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

TLV-TWA: Not available in NOM-010-STPS-2014 - México
PEL: 2 mg / m^3 According to NOM-010-STPS-2014 - México

Exposure to caustic solutions, mists or aerosols in concentrations as low as 5% Sodium Hydroxide can cause irritation and / or severe burns to the skin. The severity can be reduced by quickly rinsing the affected areas with large amounts of water and obtaining immediate medical attention. Swallowing liquid sodium hydroxide solutions can cause severe burns to the mucous membranes of the mouth, throat, esophagus, and stomach. Sodium hydroxide is an odorless material.

The following table summarizes the effects on human health, according to OSHA:

Exposure level (mg/m^3)	Health effects
0.5	ERPG - 1
0.5-2	Minor respiratory irritation
1	Mild watering for the eyes
2	REL - Ceiling TLV - Ceiling
>2	May cause upper respiratory tract damage
5	ERPG - 2
10	IDLH
50	ERPG-3
1% aqueous solution	Eye irritation

	5% aqueous solution May cause severe skin irritation and / or burns
8.2. Appropriate engineering controls	Ensure adequate ventilation of the workplace. Keep concentrations well below exposure limits. Normal ventilation for typical manufacturing operations is generally adequate. Local hoods should be used during operations that produce or release large quantities of product. In low or confined areas, mechanical ventilation should be provided. Have showers and eyewash stations.
8.3. Individual protection measures, such as personal protective equipment, PPE	**General information:** The risk assessment must be carried out and documented in each work area to assess the risks related to the use of the product and to select the personal protective equipment corresponding to the risk. The following recommendations should be followed. Have a self-contained breathing apparatus for use in an emergency. Have a product resistant suit to use in an emergency. Personal protective equipment for the body should be selected based on the tasks to be performed and the risks involved. Protect your eyes, face and skin from contact with the product. **Eye / face protection:** Safety glasses and face shield should be worn to avoid risk of splash exposure. Wear eye protection that meets the requirements of ANSI Z87.1 DO NOT wear contact lenses. Keep an eye wash fountain and quick-wash showers in the work area. **Hand Protection:** When handling this product, impervious protective gloves made of PVC, nitrile or butyl should be worn. **Body protection:** Wear chemical resistant work clothes and safety shoes. Wear a complete antacid suit for repairs of solid or liquid soda spills. **Respiratory protection:** Where necessary, use respiratory protection for dust (N95 particulate respirator). Special attention must be paid to the oxygen levels present in the air. If large releases occur, wear self-contained breathing apparatus (SCBA). Up to 10 mg / m3: An Air Respirator (SAR) operated in continuous flow mode, eye protection, or a full facepiece respirator with high efficiency particulate filter (s), or a powered air purifying respirator is required. air with filter (s) for dust and mist, eye protection or a full facepiece Self-Contained Breathing Apparatus (SCBA); or full facepiece SAR. **Hygiene measures:** Ask for special instructions before use. Risk assessment measures are not necessary beyond correct handling in accordance with industrial hygiene and safety procedures. Eating, drinking and smoking are prohibited while using the product. **Environmental exposure controls:** For information on disposal, see section 13.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Appearance (physical state, color, etc.)	Physical state: Solid (Flakes or granules) White color
9.2. Odor	without smell
9.3. Odor threshold	Does not apply
9.4. Hydrogen potential, pH	12 a 14
9.5. Melting point	318 °C
9.6. Boiling point	1388 °C
9.7. Flashpoint	Does not apply
9.8. Evaporation rate	Does not apply
9.9. Flammability (solid / gas)	Non-flammable solid

9.10. Upper / lower flammability or explosive limit	Not available
9.11. Vapor pressure	Not available
9.12. Vapor density (air = 1)	Not available
9.13. Relative density	Not available
9.14. Solubility (ies)	100% 111 g / 100g of water
9.15. Partition coefficient n-octanol / water	Not available
9.16. Autoignition temperature	Not available
9.17. Decomposition temperature	No decomposition was observed up to 1000 ° C.
9.18. Viscosity	Not available
9.19. Molecular weight	Molecular weight: 40.01 g / mol
9.20. Other relevant data	Explosive properties: Not explosive Oxidizing properties: The substance, due to its chemical structure, cannot react exothermically with combustible materials. Other Information: None

SECTION 10. STABILITY AND REACTIVITY

10.1. Reactivity	The material will not react in a dangerous way. It is very hygroscopic, with little humidity in the air it reacts with carbon dioxide in the air to form sodium carbonate.
10.2. Chemical stability	It does not cause dangerous reactions if handled and stored in accordance with regulations. Stored at normal ambient temperatures (-40 ° C to + 40 ° C), the product is stable and does not require stabilizers.
10.3. Possibility of hazardous reactions	Do not store near acetaldehydes, acroleins and acrylonitriles because they polymerize violently.
10.4. Conditions to avoid	Avoid high temperatures, contact with acids and water. Stay away from incompatibles. Humidity.
10.5. Incompatible materials	The substance is a strong base, reacts violently with acids and is corrosive in humid environments to metals such as zinc, aluminum, tin, and lead, giving rise to hydrogen (fuel and explosive). Attacks some forms of plastic, rubber, and coatings. Rapidly absorbs carbon dioxide and water from the air. It can generate heat in contact with moisture or water.
10.6. Hazardous decomposition products	When heated, it can give off irritating and toxic fumes. Thermal decomposition: sodium oxide.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1. Information on likely routes of entry	The most common cases of accidents are by contact with the skin and eyes, as well as inhalation of mists or dust.
11.2. Symptoms related to the physical, chemical and toxicological characteristics	**Ingestion:** It causes severe burns in the mouth, if swallowed the damage is also in the esophagus causing vomiting and collapse. **Inhalation:** Inhalation of dust or mist causes irritation and damage to the respiratory tract. In case of exposure to high concentrations, nasal ulceration occurs. At a concentration of 0.005-0.7 mg / m3, burns to the nose and tract have been reported. In animal studies, serious damage to the respiratory tract has been reported after chronic exposure. **Skin contact:** Both solid sodium hydroxide and concentrated solutions are highly corrosive to the skin. **Eye contact:** Sodium hydroxide is extremely corrosive to the eyes, so the splashes are very dangerous, they can cause great irritation in the cornea, ulceration, cloudiness and, finally, its disintegration. In more severe cases there may be permanent blindness, so immediate first aid is vital.
11.3. Immediate and delayed effects, as well as	**Routes of exposure:** Inhalation, dermal and eye contact.

chronic effects from short or long-term exposure	**Inhalation:** It can cause coughing and bronchospasm. Severe inhalation can cause upper airway edema and burns, stridor, and rarely lung damage. **Skin contact:** It can cause irritation to full thickness burns. Metabolic acidosis can develop. **Eye contact:** Severe conjunctival irritation and chemosis, defects in the corneal epithelium and can cause loss of vision. **Ingestion:** Irritation and injury to the gastrointestinal tract, with burns. Edema in the oropharynx, and burns in the stomach and esophagus. It can cause hypotension, tachycardia, tachypnea and, rarely, fever.
11.4. Numerical measures of toxicity (such as acute toxicity estimates)	**Acute toxicity:** ETA-LD50 oral (mouse, calc.): does not apply ETA-LD50 der (rabbit, calc.): does not apply ETA-LD50 inh. (mouse, 4hs., calc.): does not apply **Skin corrosion or irritation:** Skin irritation (rabbit, calc.): Corrosive **Serious eye damage / irritation:** Eye irritation (rabbit, calc.): Corrosive **Respiratory or skin sensitization:** Skin sensitivity (guinea pig, calc.): Not sensitizing Respiratory sensitivity (guinea pig, calc.): Not sensitizing
11.5. Interactive effects	Not available
11.6. When specific chemical data are not available	does not apply
11.7. Mixtures	does not apply
11.8. Information on the mixture or its ingredients	does not apply
11.9. Other information	Mutagenicity, Carcinogenicity and toxicity for reproduction: No information is available on any component of this product, which has levels greater than or equal to 0.1%, as a probable, possible or confirmed human carcinogen by IARC (International Agency for Research on Carcinogens).

SECTION 12. ECOTOXICOLOGICAL INFORMATION

12.1. Toxicity	This material is slightly harmful to aquatic organisms
12.2. Persistence and degradability	BIODEGRADABILITY (estimated): The product is inorganic.
12.3. Bioaccumulative potential	Not available
12.4. Mobility in the soil	Not available
12.5. Other adverse effects	Not available

SECTION 13. INFORMATION REGARDING THE DISPOSAL OF PRODUCTS

13.1. Description of waste and information on how to handle it safely and its disposal methods, including disposal of contaminated containers	Both the product surplus and the empty containers must be disposed of in accordance with current legislation on Environmental Protection and in particular Hazardous Waste. You must classify the waste and dispose of it through an authorized company. Disposal procedure: Neutralization and wastewater treatment.

SECTION 14. TRANSPORT INFORMATION

14.1. UN number	UN 1823
14.2. UN proper shipping name	Solid Sodium Hydroxide
14.3. Transport hazard class (es)	Class: 8 Classification in USA OSHA Classification: Hazardous according to the definition of the Hazard Communication Standard. TSCA Inventory Status: Yes SARA Hazard Categories: SHARP: Yes CHRONIC: No FIRE: No REAGENT: Yes SUDDEN DISCHARGE: No

Primary Hazard Labels	**Secondary risk labels**
	does not apply

14.4. Packing / packing group, if applicable	II
14.5. Environmental risks	See section 12
14.6. Special precautions for the user	Use only authorized transports for hazardous materials. Avoid transportation in vehicles where the cargo space is not separated from the driver's compartment. Ensure that the driver is aware of the potential hazards of the cargo and knows what to do in the event of an accident or emergency.
14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	does not apply

SECTION 15. REGULATORY INFORMATION

15.1. Specific provisions on safety, health and environment for the dangerous chemical substances or mixture in question	does not apply

SECTION 16. OTHER INFORMATION INCLUDING THAT RELATING TO THE PREPARATION AND UPDATING OF SAFETY DATA SHEETS

16.1. The information is believed to be correct, but is not exhaustive and is to be used for guidance only, which is based on current knowledge of the chemical or mixture and is applicable to the appropriate safety precautions for the product.
Before using the product in a new process or experiment, a complete safety and material compatibility study should be carried out. Ensure proper air ventilation. Make sure national and local regulations are followed. Although special care has been taken in preparing this document, no liability is accepted for injury or damage.

This information should be used to make an independent determination of methods to protect workers and the environment.
NFPA risk

Health: **3**
Fire: **0**
Reactivity: **1**
Special: **Ninguno**

16.2. Abbreviations and acronyms **OSHA:** Occupational Safety and Health Administration

	TLV (threshold limit value): Threshold limit value. Maximum concentration allowed for worker exposure. It is generally given in parts per million (PPM) or mg/m^3. According to the ACGIH (North American Industrial Hygiene Agency), there are the following TLVs: TWA, STEL and CEILING. **TWA (time-weighted average):** Maximum concentration weighted for jobs of 8 hours a day and 40 hours a week. **TLV-C (ceiling):** Instantaneous concentration to which a worker should never be exposed during his work. **NIOSH:** National Institute for Occupational Safety and Health **REL – Ceiling:** Recommended exposure limit Ceiling **ERPG-1:** The maximum airborne concentration below which it is believed that almost all individuals could be exposed for up to one hour without experiencing more than mild transient adverse health effects or without perceiving a clearly defined health condition and objectionable odor. **ERPG-2:** The maximum airborne concentration below which it is believed that almost all individuals could be exposed for up to one hour without experiencing or developing irreversible or other serious health effects or symptoms that could affect an individual's ability to drink protection measures. **ERPG-3:** The maximum airborne concentration below which it is believed that most people could be exposed for up to one hour without experiencing or developing life-threatening health effects. **IDLH (Immediately Dangerous to Life and Health):** Concentration presenting an immediate danger of serious irreversible damage or death.
16.3. References	**PANPHLET 65 of the Chlorine Institute,** Personal protective equipment for chlor-alkali chemicals. 5th Edition. **NOM-010-STPS-2014,** Chemical pollutants in the work environment Recognition, evaluation and control.