

SAFETY DATA SHEET

Revision 3

1. Identification of the Substance / Preparation and of the Company / Undertaking

Product Name: Klor 9
UN/ID No UN1791
Synonyms: Bleach
Recommended Use Industrial, Manufacturing or Laboratory use.

Company Name: Trio Sales & Leasing, 908 Benton St., Valley Park, MO 63088. (314) 421-1836

Emergency Telephone:

CHEMTREC (US): 1-800-424-9300

TRIO SALES & LEASING 314-421-1836

NATIONAL EMERGENCY RESPONSE CENTER:

1-800-424-8802

Call CHEMTREC only in the event of chemical emergencies involving a SPILL, LEAK, FIRE, EXPOSURE, or ACCIDENT involving chemicals.

2. Hazards Identification

GHS - Classification

Skin corrosion/irritation	Category 1 Category 1B
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (single exposure)	Category 2
Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 1



Signal Word:

Danger

Email:

N/A

N/A

Hazard Statements:

- Causes severe skin burns and eye damage
- May cause damage to organs
- Very toxic to aquatic life with long lasting effects

Physical Hazards

Corrosive to metals	Category 1
Oxidizing liquids	Category 2

- May be corrosive to metals

- May intensify fire; oxidizer

**Precautionary Statements:**

- Keep away from heat/sparks/open flames/hot surfaces. — No smoking
- Keep/Store away from clothing/ combustible materials
- Take any precaution to avoid mixing with combustibles
- Do not breathe dust/fume/gas/mist/vapors/spray
- Wash face, hands and any exposed skin thoroughly after handling
- Do not eat, drink or smoke when using this product
- Avoid release to the environment
- Wear protective gloves/protective clothing/eye protection/face protection
- Immediately call a POISON CENTER or doctor/physician
- Call a POISON CENTER or doctor if you feel unwell
- Immerse in cool water/wrap in wet bandages
- Wash contaminated clothing before reuse
- Absorb spillage to prevent material damage
- IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
- IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician
- In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish
- Store locked up
- Store in corrosive resistant aluminum container with a resistant inliner
- Dispose of contents/container to industrial incineration plant
- Dispose of contents/ container to an approved waste disposal plant
- Dispose of contents/container to industrial incineration plant

3. Composition / Information on Ingredients**Hazardous**

Chemical Name	CAS No	Weight-%	EC No
Sodium Hydroxide	1310-73-2	1	215-185-5
Sodium chloride	7647-14-5	7	231-598-3
Sodium hypochlorite	7681-52-9	10	231-668-3

Non-Hazardous

Chemical Name	CAS No	Weight-%	EC No
Water	7732-18-5	Balance	231-791-2

4. First Aid Measures**General Advice:**

Immediate medical attention is required.

Eye Contact:

Keep eye wide open while rinsing. Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Do not rub affected area.

Skin Contact:

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is required.

Inhalation:

Move to fresh air. Call a physician or poison control center immediately. If breathing is difficult, give oxygen. If not breathing, give artificial respiration.

Ingestion:	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Drink plenty of water. Immediate medical attention is required. Call a physician or poison control center immediately. Clean mouth with water and drink afterwards plenty of water. Remove from exposure, lie down.
Note to Physicians:	Treat symptomatically. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure.
Self-protection of the First Aider:	Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

5. Fire-fighting Measures

Flammable Properties:	Highly exothermic reactions with organic materials and oxidizable materials may cause fires in adjacent, heat sensitive materials, Not flammable
Explosive Properties:	Containers of this material can explode as oxygen is liberated under high heat or fire conditions. Reacts to form explosive products with amines, ammonia or ammonium salts, methanol, aziridine. Explosive reaction with formic acid (@ 55°C), phenyl acetonitrile, ethylene amine
Suitable Extinguishing Media:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment, Water spray may be used to keep fire exposed containers cool
Unsuitable Extinguishing Media:	No information available
Specific Hazards Arising from the Chemical:	The product causes burns of eyes, skin and mucous membranes, Thermal decomposition can lead to release of irritating and toxic gases and vapors, In the event of fire and/or explosion do not breathe fumes
Protective Equipment and Precautions for Firefighters:	In the event of a fire, wear full protective clothing and MSHA/NIOSH (approved or equivalent) self-contained breathing apparatus with full facepiece operated in the pressure-demand or other positive pressure mode

6. Accidental Release Measures

Personal Precautions:	Evacuate personnel to safe areas. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Keep people away from and upwind of spill/leak.
Environmental Precautions:	Prevent further leakage or spillage if safe to do so. Do not allow into any sewer, on the ground or into any body of water. Prevent product from entering drains. Should not be released into the environment.
Methods for Cleaning Up:	Dam up. Soak up with inert absorbent material. Clean contaminated surface thoroughly. After cleaning, flush away traces with water. Prevent product from entering drains. Take up mechanically, placing in appropriate containers for disposal. Dike far ahead of liquid spill for later disposal.
Other Information:	Not applicable.

7. Handling and Storage

Advice on Safe Handling:	Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems. Use only with adequate ventilation.
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Storage Conditions:

Keep container tightly closed in a dry and well-ventilated place. Keep in properly labeled containers. Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatible Materials:

Strong acids and bases; Oxidizing agents; Ether, ammonia compounds, hydrogen peroxide, all acids, alum, reducing agents, human or animal waste, oxidizable or combustible materials such as wood, cloth or organic materials, organic chemicals such as solvents and solvent based cleaning compounds, fuels and fuel oils, amines, methanol, propane, organic polymers, ethylene glycol, insecticides, heavy metals such as iron, copper, magnesium, aluminum, tin, steel, stainless steel, carbon steel, manganese, zinc, chromium, nickel, cobalt and their alloys, sodium sulfite, sodium bisulfite, sodium hydrosulfite, sodium thiosulfate. Do not mix this product with any of the foregoing or hazardous gases can result.

8. Exposure Controls / Personal Protection

Chemical Name		ACGIH TLV		OSHA PEL		Ontario TWA	
Sodium Hydroxide		Ceiling: 2 mg/m³		2 mg/m³ Ceiling 2 mg/m³ TWA		CEV: 2 mg/m³	
Chemical Name	European Union	China	Japan	Korea	Australia	Taiwan	
Sodium Hydroxide		Ceiling: 2 mg/m³ Ceiling	Ceiling: 2 mg/m³	Ceiling: 2 mg/m³	2 mg/m³ Peak	TWA: 2 mg/m³	

Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992)

Engineering Controls:

Ensure adequate ventilation, especially in confined areas

Personal protective equipment (PPE)**Eye/Face Protection:**

Tight sealing safety goggles. Face protection shield.

Body Protection:

Wear chemical resistant clothing such as gloves, apron, boots or whole bodysuits made from neoprene, as appropriate. Rubber boots. Suitable protective clothing. Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Gloves made of plastic or rubber.

General Hygiene Considerations:

When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Regular cleaning of equipment, work area and clothing is recommended. Keep away from food, drink and animal feeding stuffs. Contaminated work clothing should not be allowed out of the workplace. Avoid contact with skin, eyes or clothing. Take off all contaminated clothing and wash it before reuse. Wear suitable gloves and eye/face protection.

9. Physical and Chemical Properties**9.1. Information on basic physical and chemical properties**

Physical State:	Liquid	Odor:	Pungent, Chlorine Bleach Odor
Appearance:	Aqueous solution	Odor Threshold:	No information available
Color:	Clear Yellow		
Property	Values	Remarks • Method	
pH:	13		
"Salt Out" Point (°F):			No information available
Melting Point/Freezing Point:	-18 °C / -1 °F		
Boiling Point/Boiling Range:	106 °C / 222 °F		
Flash Point:			No information available
Evaporation Rate (BuAc=1):			No information available
Flammability (solid, gas):			No information available
Flammability Limits in Air:			No information available
Upper Flammability Limit:			Lower Flammability Limit:
Vapor Pressure (mm Hg) :	65.8 @ 55°C		
Vapor density (Air =1)			No information available
Specific Gravity (H₂O=1):	1.17		
Specific Gravity (2nd value):			
Water Solubility:	100% soluble in water		

Solubility(ies):	No information available
Partition Coefficient (n-octanol/water)	No information available
Autoignition Temperature:	No information available
Decomposition Temperature:	No information available
Kinematic Viscosity:	1.53 Centistokes
Dynamic Viscosity:	@ 77 °F
Oxidizing Properties:	No information available
Explosive Properties:	Containers of this material can explode as oxygen is liberated under high heat or fire conditions. Reacts to form explosive products with amines, ammonia or ammonium salts, methanol, aziridine. Explosive reaction with formic acid (@ 55°C), phenyl acetonitrile, ethylene amine

9.2. Other information

Softening Point:	No information available
Molecular Weight:	74.45
VOC Content(%):	No information available
Density:	No information available
Bulk Density:	No information available

10. Stability and Reactivity

Stability:	Stable under normal conditions of use and storage; Stability decreases with increased concentration, heat, light exposure, decrease in pH and contamination with heavy metals such as nickel, cobalt, copper and iron
Conditions to Avoid:	Exposure to air or moisture over prolonged periods; Excessive heat, exposure to light, reduced alkalinity, and contamination of any kind. Reduced alkalinity or contamination can result in evolution of chlorine (toxic) gas. Decrease in pH such as by mixing with other than water, and contamination with items mentioned below as incompatible can result in evolution of chlorine (toxic) gas
Incompatible Materials:	Strong acids and bases, Oxidizing agents, Ether, ammonia compounds, hydrogen peroxide, all acids, alum, reducing agents, human or animal waste, oxidizable or combustible materials such as wood, cloth or organic materials, organic chemicals such as solvents and solvent based cleaning compounds, fuels and fuel oils, amines, methanol, propane, organic polymers, ethylene glycol, insecticides, heavy metals such as iron, copper, magnesium, aluminum, tin, steel, stainless steel, carbon steel, manganese, zinc, chromium, nickel, cobalt and their alloys, sodium sulfite, sodium bisulfite, sodium hydrosulfite, sodium thiosulfate. Do not mix this product with any of the foregoing or hazardous gases can result.
Hazardous Decomposition Products:	Thermal decomposition can lead to release of irritating and toxic gases and vapors
Possibility of Hazardous Reactions:	None under normal processing

11. Toxicological Information

Product Information

Acute Toxicity: 0% of the mixture consists of ingredient(s) of unknown toxicity.

The following values are calculated based on chapter 3.1 of the GHS document

Chemical Name	Oral LD ₅₀ :	Dermal LD ₅₀ :	LC ₅₀ (Lethal Concentration):
Sodium Hydroxide		1350 mg/kg (Rabbit)	
Sodium chloride	3 g/kg (Rat)	10 g/kg (Rabbit)	42 g/m ³ (Rat) 1 h
Sodium hypochlorite	8200 mg/kg (Rat)	10000 mg/kg (Rabbit)	
Water	90 mL/kg (Rat)		

Chronic Toxicity:**Carcinogenicity:**

This product contains one or more substances which are classified by IARC as carcinogenic to humans (Group I), probably carcinogenic to humans (Group 2A) or possibly carcinogenic to humans (Group 2B)

Chemical Name	IARC
Sodium hypochlorite	Group 3

IARC (International Agency for Research on Cancer)

Not classifiable as a human carcinogen

Target Organ Effects:

Respiratory system, Eyes, Skin

12. Ecological Information**Ecotoxicity**

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Very toxic to aquatic life with long lasting effects

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
Sodium Hydroxide		45.4: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 static	
Sodium chloride		5560 - 6080: 96 h <i>Lepomis macrochirus</i> mg/L LC50 flow-through 6020 - 7070: 96 h <i>Pimephales promelas</i> mg/L LC50 static 12946: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 7050: 96 h <i>Pimephales promelas</i> mg/L LC50 semi-static 6420 - 6700: 96 h <i>Pimephales promelas</i> mg/L LC50 static 4747 - 7824: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 flow-through	1000: 48 h <i>Daphnia magna</i> mg/L EC50 340.7 - 469.2: 48 h <i>Daphnia magna</i> mg/L EC50 Static
Sodium hypochlorite	0.095: 24 h <i>Skeletonema costatum</i> mg/L EC50	0.06 - 0.11: 96 h <i>Pimephales promelas</i> mg/L LC50 flow-through 4.5 - 7.6: 96 h <i>Pimephales promelas</i> mg/L LC50 static 0.4 - 0.8: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 0.28 - 1: 96 h <i>Lepomis macrochirus</i> mg/L LC50 flow-through 0.05 - 0.771: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 flow-through 0.03 - 0.19: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 semi-static 0.18 - 0.22: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 static	2.1: 96 h <i>Daphnia magna</i> mg/L EC50 0.033 - 0.044: 48 h <i>Daphnia magna</i> mg/L EC50 Static

Persistence and Degradability:

No information available.

Bioaccumulation:

No information available.

Mobility:

No information available.

13. Disposal Considerations**Waste from Residues/Unused Products:**

Disposal should be in accordance with applicable regional, national and local laws and regulations

Contaminated Packaging:

Do not reuse container.

14. Transport Information**DOT**

Proper shipping name	HYPOCHLORITE SOLUTIONS (SODIUM HYPOCHLORITE)
Hazard Class	8
UN/ID No	UN1791
Packing Group	III
Description	UN1791, HYPOCHLORITE SOLUTIONS (SODIUM HYPOCHLORITE), 8, PG III, MARINE POLLUTANT

**15. Regulatory Information****International Inventories**

All of the components in the product are on the following inventory lists: TSCA (United States);, Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Australia (AICS), South Korea (KECL);, China (IECSC), Philippines (PICCS), This product contains a substance not listed on international inventories - it is for research and development use only.

AICS	Complies
TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	-
IECSC	Complies
KECL	Complies
PICCS	Complies

Chemical Name	AICS	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS
Sodium Hydroxide	Listed	Listed	Listed	-	Listed	-	(2)-1972 (1)-410	Listed	KE-31487	Listed
Sodium chloride	Listed	Listed	Listed	-	Listed	-	(1)-236	Listed	KE-31387	Present
Sodium hypochlorite	Listed	Listed	Listed	-	Listed	-	(1)-237	Listed	KE-31506	Present
Water	Listed	Listed	Listed	-	Listed	-	-	Listed	KE-35400	Present

Inventory Legend

AICS - Australian Inventory of Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

RESTRICTIONS - REACH TITLE VII No information available

US Federal Regulations

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

Chemical Name	CERCLA Hazardous Substances and the Reportable Quantities	SARA Extremely Hazardous Substances EPCRA RQ	SARA Extremely Hazardous Substances TPQ
Sodium Hydroxide	1000 lb 454 kg	-	-
Sodium hypochlorite	100 lb 45.4 kg	100 lb	-

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic health hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive hazard	No

U.S. State Right-to-Know Regulations**California Proposition 65:**

This product does not contain any Proposition 65 chemicals

16. Other Information**National Fire Protection Association (NFPA) Ratings**

Maximum Use (mg/L unless otherwise indicated): 50

Prepared By: Trio Sales & Leasing

KLOR 9

Issue Date: 28-Sep-2012
Revision Date: 24-Aug-2017
Revision Note: SDS sections updated 1

Disclaimer:

Trio Sales expressly disclaims all express or implied warranties of merchantability and fitness for a particular purpose, with respect to the product or information provided herein. All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate, Trio Sales makes no representations as to its accuracy or sufficiency. Conditions of use are beyond Trio's control, and, therefore, users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes, and they assume all risks of their use, handling, and disposal of the product, or from the publication or use of, or reliance upon, information contained herein. This information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process.

End of Safety Data Sheet