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Version 5

**1. Identification****Product Name** TOWER 13**Other means of identification Product****Code** 221T  
**UN/ID No.** UN1791  
**Synonyms** None**Recommended use of the chemical and restrictions on use****Recommended Use Uses** CLOGem II bleach precursor  
**advised against** No information available**Manufacturer Address**

Anderson Chemical Company, 325 South Davis Avenue, Litchfield, MN 55355 (320-693-2477)

**Emergency telephone number**

Chemtrec 1-800-424-9300

**2. Hazard(s) identification****Classification**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (single exposure)	Category 3
Corrosive to metals	Category 1

**Hazards not otherwise classified (HNOC)**

Not applicable

**Label elements****Signal word:** Danger**Hazard statements:**Causes severe skin burns and eye damage  
May cause respiratory irritation  
May be corrosive to metals

**Precautionary Statements - Prevention:**

Do not breathe dusts or mists  
 Wash face, hands and any exposed skin thoroughly after handling  
 Wear protective gloves/protective clothing/eye protection/face protection  
 Use only outdoors or in a well-ventilated area  
 Keep only in original container

**Precautionary Statements - Response:**

Immediately call a POISON CENTER or doctor  
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
 Immediately call a POISON CENTER or doctor  
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower  
 Wash contaminated clothing before reuse  
 IF INHALED: Remove person to fresh air and keep comfortable for breathing  
 Immediately call a POISON CENTER or doctor  
 IF SWALLOWED: Rinse mouth. DO NOT induce vomiting  
 Absorb spillage to prevent material damage

**Precautionary Statements - Storage:**

Store locked up  
 Store in a well-ventilated place. Keep container tightly closed  
 Store in corrosion resistant container with a resistant inner liner

**Precautionary Statements - Disposal:**

Dispose of contents/container to an approved waste disposal plant

**Unknown Acute toxicity:** Not applicable

**Other Information**

Not applicable

**3. Composition/information on ingredients**

Chemical name	CAS No	Weight-%
Sodium hypochlorite	7681-52-9	12.5

Any concentration shown as a range is due to batch variation or the exact percentage has been withheld as a trade secret.

**4. First-aid measures****Description of first aid measures****General advice**

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

**Inhalation**

Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical advice/attention. May cause asthma-like (reactive airways) symptoms.

**Eye contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get immediate medical advice/attention. Do not attempt to neutralize with chemical agents. Oils and ointments should not be used at this time.

<b>Skin contact</b>	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention. Irritation may follow an initial latency which may vary by hours for dilute solutions to minutes for more concentrated solutions. If skin feels slippery, the product may be still present in sufficient quantities to cause rash or burn. Continue washing skin until slick feeling is gone. Discard footwear that cannot be decontaminated and any leather articles.
<b>Ingestion</b>	Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Get immediate medical advice/attention. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Damage may appear days after exposure. Do not attempt to neutralize.
<b>Self-protection of the first aider</b>	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8). Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

**Most important symptoms and effects, both acute and delayed**

**Symptoms** Redness. Burning. May cause blindness. Coughing and/ or wheezing.

**Indication of any immediate medical attention and special treatment needed**

**Note to physicians** 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.

**5. Fire-fighting measures**

<b>Suitable Extinguishing Media</b>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
<b>Large Fire</b>	CAUTION: Use of water spray when fighting fire may be inefficient.
<b>Unsuitable extinguishing media</b>	Do not scatter spilled material with high pressure water streams.
<b>Specific hazards arising from the chemical</b>	The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. Containers may explode when heated. Cool containers with flooding quantities of water until well after fire is out. Do not allow run-off from fire-fighting to enter drains or water courses.
<b>Hazardous combustion products</b>	Sodium oxides. Hydrogen chloride (HCl). Disodium oxide. Chlorine. On decomposition product releases oxygen which may intensify fire.
<b>Explosion Data</b>	
<b>Sensitivity to mechanical impact</b>	None.
<b>Sensitivity to static discharge</b>	None.
<b>Special protective equipment for fire-fighters</b>	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment. In the event of fire and/or explosion do not breathe fumes. Overexposure to toxic decomposition products may cause a health hazard.

**6. Accidental release measures****Personal precautions, protective equipment and emergency procedures**

**Personal precautions** Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Corrosive material. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

**Other information** Refer to protective measures listed in Sections 7 and 8.

**Methods and material for containment and cleaning up**

**Methods for containment** Prevent further leakage or spillage if safe to do so. Suppress vapors with water spray. Keep out of drains, sewers, ditches and waterways.

**Methods for cleaning up** Dike far ahead of liquid spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Flush area with flooding quantities of water. Do not attempt to neutralize or mix with other cleaning agents. Clean contaminated surface thoroughly.

## 7. Handling and storage

### Precautions for safe handling

#### Advice on safe handling

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. When diluting, always add the product to water. Never add water to the product.

### Conditions for safe storage, including any incompatibilities

#### Storage Conditions

Keep containers tightly closed and properly labeled. Containers that have been emptied will retain product residue and should be handled as if they were full. Store in a cool, dry, well-ventilated place away from incompatible materials. Wash hands before eating, drinking, using tobacco, applying make-up or using the toilet. Do not store, use, and/or consume foods, beverages, tobacco in areas where this product is stored. FROM EPA LABEL: STORAGE AND DISPOSAL: Do not contaminate water, food or feed by storage, disposal or cleaning of equipment. TOWER 13 STORAGE: Store this product in a cool dry area, away from direct sunlight and heat to avoid deterioration. In case of spill, flood areas with large quantities of water. Product or rinsates that cannot be used should be diluted with water before disposal in a sanitary sewer, in accordance with state & local regulations.

#### Incompatible Materials

Oxidizing agent. Acids. Bases. Amines. Reducing agent. Metals. Ammonia. Organic material. Cleaner, detergents/soaps. Peroxides.

## 8. Exposure controls/personal protection

### Control parameters

#### Exposure Limits

The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.

#### Exposure Guidelines

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

### Appropriate engineering controls

#### Engineering controls

Showers  
Eyewash stations  
Ventilation systems.

### Individual protection measures, such as personal protective equipment

#### Eye/face protection

Face protection shield. Tight sealing safety goggles.

#### Hand protection

Wear suitable gloves. Impervious gloves.

#### Skin and body protection

Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron. Product can react with various fabrics usually increasing with concentrations. Reactions vary significantly depending on strength of chemical, material, fabric treatment and dye color.

#### Respiratory protection

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

#### Environmental exposure controls

Do not allow into any sewer, on the ground or into any body of water. Local authorities should be advised if significant spillages cannot be contained.

**General hygiene considerations** Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Wash hands before breaks and immediately after handling the product.

## 9. Physical and chemical properties

### Information on basic physical and chemical properties

<b>Physical State:</b>	Liquid
<b>Appearance:</b>	Aqueous solution
<b>Color:</b>	Yellow
<b>Odor:</b>	Pungent Chlorine
<b>Odor Threshold:</b>	No information available
<b>pH:</b>	No information available
<b>Salt Out Point:</b>	No information available
<b>Melting Point/Freezing Point:</b>	-29 °C / -20 °F
<b>Boiling Point/Boiling Range:</b>	No information available
<b>Flash Point:</b>	No information available
<b>Evaporation Rate (BuAc=1):</b>	No information available
<b>Flammability (solid, gas):</b>	No information available
<b>Flammability Limits in Air:</b>	No information available
<b>Vapor Pressure (mm Hg):</b>	No information available
<b>Vapor density (Air =1):</b>	No information available
<b>Specific Gravity (H<sub>2</sub>O=1):</b>	No information available
<b>Water Solubility:</b>	100% Complete
<b>Solubility(ies):</b>	No information available
<b>Partition Coefficient (n-octanol/water):</b>	No information available
<b>Autoignition Temperature:</b>	No information available
<b>Decomposition Temperature:</b>	No information available
<b>Kinematic Viscosity:</b>	No information available
<b>Dynamic Viscosity:</b>	No information available
<b><u>Other information</u></b>	
<b>Explosive properties</b>	No information available
<b>Oxidizing properties</b>	No information available
<b>Molecular Weight:</b>	74.45

## 10. Stability and reactivity

<b>Reactivity</b>	Contact with most metals will generate flammable hydrogen gas. Contact with acids liberates toxic gas. May react with oxidizing agents. Violent reactions may occur with some organic compounds. Reacts readily with various reducing sugars to produce carbon monoxide.
<b>Chemical stability</b>	Slowly decomposes on contact with air. Rate increases with the concentration and temperature. Sodium hypochlorite becomes less toxic with age.
<b>Possibility of hazardous reactions</b>	Contact with water generates heat. Heating causes rise in pressure with risk of bursting. Reacts with acids by giving off heat. Hazardous gases may be generated from contact with acids, ammonium hydroxide (aqua ammonia) or cleaners containing ammonia compounds. Contact with acids, halogenated organics, organic nitro compounds, glycols, or sodium tetrahydroborate may produce flammable gas. Contact with 1,2-dichloroethylene, trichloroethylene, tetrachloroethane or phosphorous can form spontaneously flammable chemicals.
<b>Conditions to avoid</b>	Exposure to air or moisture over prolonged periods. Extremes of temperature and direct sunlight.

**Incompatible Materials** Oxidizing agent. Acids. Bases. Amines. Reducing agent. Metals. Ammonia. Organic material. Cleaner, detergents/soaps. Peroxides.

**Hazardous decomposition products** Thermal decomposition can lead to release of irritating and toxic gases and vapors. Sodium oxides. Hydrogen chloride (HCl). Oxygen. Disodium oxides. Chlorine.

## 11. Toxicological information

### Information on likely routes of exposure

#### Product Information

##### Inhalation

Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal.

##### Eye contact

Specific test data for the substance or mixture is not available. Causes burns. (based on components). Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.

##### Skin contact

Specific test data for the substance or mixture is not available. Causes severe burns.

##### Ingestion

Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.

### Symptoms related to the physical, chemical and toxicological characteristics

**Symptoms** Redness. Burning. May cause blindness. Coughing and/ or wheezing.

### Numerical measures of toxicity

#### Acute Toxicity:

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

ATEmix (oral) 14,954.70 mg/kg  
ATEmix (dermal) 43,521.70 mg/kg

#### Component Information

Chemical name	Oral LD <sub>50</sub> :	Dermal LD <sub>50</sub> :	LC <sub>50</sub> (Lethal Concentration):
Sodium hypochlorite 7681-52-9	= 8.91 g/kg ( Rat )	> 20000 mg/kg ( Rabbit )	> 10.5 mg/L ( Rat ) 1 h

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Skin corrosion/irritation** Causes severe burns.

**Serious eye damage/eye irritation** Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.

**Respiratory or skin sensitization** No information available.

**Germ cell mutagenicity** No information available.

**Carcinogenicity** See section 2 for classified hazards based on component information.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
Sodium hypochlorite 7681-52-9	-	Group 3	-	-

**IARC (International Agency for Research on Cancer)**

Group 3 - Not Classifiable as to Carcinogenicity in Humans

**Reproductive toxicity** No information available.

**STOT - single exposure** No information available.

**STOT - repeated exposure** No information available.

**Aspiration hazard** No information available.

**Other Adverse Effects:** No information available.

## 12. Ecological information

**Ecotoxicity** The environmental impact of this product has not been fully investigated.

Chemical name	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
Sodium hypochlorite 7681-52-9	-	0.06 - 0.11 mg/L (LC50 96 h flow-through - Pimephales promelas) 4.5 - 7.6 mg/L (LC50 96 h static - Pimephales promelas) 0.4 - 0.8 mg/L (LC50 96 h static - Lepomis macrochirus) 0.28 - 1 mg/L (LC50 96 h flow-through - Lepomis macrochirus) 0.05 - 0.771 mg/L (LC50 96 h flow-through - Oncorhynchus mykiss) 0.03 - 0.19 mg/L (LC50 96 h semi-static - Oncorhynchus mykiss) 0.18 - 0.22 mg/L (LC50 96 h static - Oncorhynchus mykiss)	-	0.033 - 0.044 mg/L (EC50 48 h Static - Daphnia magna)

**Persistence and Degradability:** No information available.

**Bioaccumulation:** There is no data for this product.

**Mobility:** No information available.

**Other Adverse Effects:** No information available.

### 13. Disposal considerations

#### Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local, state, and national regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Do not reuse empty containers.

**US EPA Waste Number (product as supplied)** D002.

**Disposal of wastes** STORAGE AND DISPOSAL: Do not contaminate water, food or feed by storage, disposal or cleaning of equipment. TOWER 13 DISPOSAL: To avoid wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments or by industry). CONTAINER HANDLING: REFILLABLE CONTAINER - Refill this container with TOWER 13 only. Do not reuse this container for any other purpose. Clean container promptly after emptying. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean container: fill container 1/4 full with water. Replace the closure or plug the opening of the container. Rotate the container, making sure to rinse all surfaces. Turn the container upside down. Add the rinsate to the application equipment or mix tank or store rinsate for later use or disposal. Allow 30 seconds for rinsate to drain. Repeat this procedure two more times. Offer container for recycling if available or dispose of in a sanitary landfill, or by other procedure allowed by state & local authorities. CONTAINER HANDLING: NONREFILLABLE CONTAINER - Do not reuse or refill this container. Clean container promptly after emptying. To clean container: fill container 1/4 full with water. Replace the closure or plug the opening of the container. Rotate the container, making sure to rinse all surfaces. Turn the container upside down. Add the rinsate to the application equipment or mix tank or store rinsate for later use or disposal. Allow 30 seconds for rinsate to drain. Repeat this procedure two more times. Offer container for recycling if available or dispose of in a sanitary landfill, or by other procedure allowed by state & local authorities.

### 14. Transport information

#### DOT

**UN/ID No** UN1791  
**Proper shipping name** HYPOCHLORITE SOLUTIONS (SODIUM HYPOCHLORITE)  
**Hazard Class** 8  
**Packing Group** III

### 15. Regulatory information

#### International Inventories

Chemical name	TSCA	AICS	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS
Sodium hypochlorite 7681-52-9	Present ACTIVE	Present	Present	-	Present	-	Present	Present	Present	Present



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

**AICS** - Australian Inventory of Chemical Substances

**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

### US Federal Regulations

#### **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**

Skin corrosion/irritation

Serious eye damage/eye irritation

Specific target organ toxicity (single exposure)

Corrosive to metals

#### **CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	SARA Extremely Hazardous Substances TPQ
Sodium hypochlorite 7681-52-9	100 lb	-	

#### **Clean Water Act (CWA)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Sodium hypochlorite 7681-52-9	100 lb	-	-	X

#### **OSHA - Process Safety Management - Highly Hazardous Chemicals**

This product does not contain any substances regulated under Process Safety Management (29 CFR 1910.119).

#### **Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS)**

This product does not contain any substances regulated under the Chemical Facility Anti-Terrorism Standards (6 CFR 27).

#### EPA Statement

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label: Precautionary Statements HAZARDS TO HUMANS AND DOMESTIC ANIMALS DANGER: Corrosive, may cause severe skin and eye irritation or chemical burns to broken skin. Causes eye damage. Do not get in eyes, on skin or clothing. Wear safety glasses or goggles and rubber gloves when handling this product. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse. Avoid breathing vapors. Vacate poorly ventilated areas as soon as possible. Do not return until odors have dissipated. Physical or Chemical Hazards Strong oxidizing agent: Mix only with water according to label directions. Mixing this product with chemicals (e.g. ammonia, acids, detergents, etc.) or organic chemicals (e.g. urine, feces, etc.) will release chlorine gas irritating to eyes, lungs, and mucous membranes. Environmental Hazards This product is toxic to fish and aquatic organisms. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

