


SAFETY DATA SHEET

Section 1. Identification

Product identifier	: ADOX™ 31
Material Number	: 57747540
Identified uses	: Sodium chlorite for Production of Chlorine dioxide
Supplier/Manufacturer	: International Dioxide, Inc. 40 Whitecap Drive North Kingstown, RI 02852 For Information: (800) 477-6071 International: +1 (401) 295-8800
In case of emergency	: CHEMTREC (800) 424 9300 International (703) 527 3887

Section 2. Hazards identification

HAZCOM Standard Status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Physical state	: Liquid.
Color	: Yellow [Light]
Classification of the substance or mixture	: ACUTE TOXICITY (oral) - Category 4 SERIOUS EYE DAMAGE - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (spleen) - Category 2
Hazard pictograms	: 
Signal word	: Danger
Hazard statements	: Harmful if swallowed. Causes serious eye damage. May cause respiratory irritation. May cause damage to organs through prolonged or repeated exposure. (spleen)
Hazard Not Otherwise Classified (HNOC)	: None known.
Precautionary statements	
Prevention	: Wear eye/face protection. Use only in a well-ventilated area. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.
Response	: Get medical attention if you feel unwell. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF SWALLOWED: Rinse mouth. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
Storage	: Store locked up.
Disposal	: Dispose of contents and container in accordance with all local, regional, national and international regulations.
Supplemental label elements	: Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials and food and drink.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	%	CAS number
Sodium chlorite	31	7758-19-2

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of first aid measures

- Eye contact** : Get medical attention immediately. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. In case of contact with eyes, flush eyes with plenty of water for at least 30 minutes. Chemical burns must be treated promptly by a physician.
- Inhalation** : Get medical attention immediately. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. If not breathing, if breathing is irregular or respiratory arrest occurs, provide artificial respiration, or oxygen by a trained professional, using a pocket type respirator.
- Skin contact** : In case of contact, flush skin with plenty of water for at least 30 minutes. Get medical attention immediately. Immediately remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : May cause respiratory irritation.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : Harmful if swallowed. May cause burns to mouth, throat and stomach.

Over-exposure signs/symptoms

- Eye contact** : Corrosive with symptoms of reddening, tearing, swelling, burning and possible permanent damage.
- Inhalation** : Causes respiratory tract irritation with symptoms of coughing, sore throat and runny nose.
- Skin contact** : Corrosive with symptoms of reddening, itching, swelling, burning and possible permanent damage.
- Ingestion** : Corrosive with symptoms of coughing, burning, ulceration, and pain. Symptoms of ingestion may include abdominal pain, nausea, vomiting, and diarrhea.

Potential chronic health effects

May cause damage to organs through prolonged or repeated exposure.

Section 4. First aid measures

- Notes to physician** : Treat symptomatically. No specific treatment.
- Protection of first-aiders** : If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : In case of fire, use water spray (fog), foam or dry chemical.
- Unsuitable extinguishing media** : Carbon dioxide (CO₂).
- Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst. Toxic and irritating gases/fumes may be given off during burning or thermal decomposition. Water runoff from fire fighting may be corrosive. Drying on clothing or other combustible materials may cause fire.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
halogenated compounds
metal oxide/oxides
- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

- Personal precautions, protective equipment and emergency procedures** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods and materials for containment and cleaning up** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal. Prevent entry into sewers, water courses, basements or confined areas.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from acids. Empty containers retain product residue and can be hazardous. Do not reuse container. Remove contaminated clothing and protective equipment before entering eating areas. Workers should wash hands and face before eating, drinking and smoking. Put on

Section 7. Handling and storage

appropriate personal protection equipment. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed.

- Conditions for safe storage** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Separate from acids. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Empty containers retain product residue and can be hazardous. Do not reuse container.

Section 8. Exposure controls/personal protection

Occupational exposure limits

Ingredient name	Exposure limits
Sodium chlorite	None

- Appropriate engineering controls** : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Personal protection

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.

- Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Respiratory protection

- Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. A NIOSH approved air purifying respirator with organic vapor cartridges and particulate prefilter can be used to minimize exposure.

Skin protection

- Permeation resistant clothing and foot protection. Permeation resistant gloves.

Eye/face protection

- chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead. If contact with product is possible, wear safety glasses with side shields.

Medical Surveillance

- Not available.

Section 9. Physical and chemical properties

- Physical state** : Liquid.
- Color** : Yellow [Light]
- Odor** : chlorine [Slight]
- Odor threshold** : Not available.
- pH** : >12
- Boiling point** : 106 °C (1013 hPa)
- Melting point** : 3°C (37.4°F)
- Flash point** : Closed cup: >100°C (>212°F)
- Evaporation rate** : Not available.
- Explosion limits** : Not available.
- Vapor pressure** : 19.87 hPa (20°C)
- Density** : 1.26 g/cm³
- Specific gravity (Relative density)** : Not available.

Section 9. Physical and chemical properties

Solubility in water	: Miscible in water.
Partition coefficient: n-octanol/water	: Not available.
Vapor density	: Not available.
Viscosity	: Dynamic: 3.26 mPa·s
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.

Section 10. Stability and reactivity

Reactivity	: Decomposes on heating.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Contact with acids liberates toxic gas.
Conditions to avoid	: Direct sources of heat.
Incompatible materials	: Reactive or incompatible with the following materials: strong acids and oxidizing agents, organic materials halogenated compounds Reducing agents
Hazardous decomposition products	: Hazardous decomposition products: Chlorine, chlorine oxides

Section 11. Toxicological information

Information on the likely routes of exposure	: Dermal contact. Eye contact. Inhalation. Ingestion.
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Potential acute health effects

Eye contact	: Causes serious eye damage.
Inhalation	: May cause respiratory irritation.
Skin contact	: No known significant effects or critical hazards.
Ingestion	: Harmful if swallowed. May cause burns to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: Corrosive with symptoms of reddening, tearing, swelling, burning and possible permanent damage.
Inhalation	: Causes respiratory tract irritation with symptoms of coughing, sore throat and runny nose.
Skin contact	: Corrosive with symptoms of reddening, itching, swelling, burning and possible permanent damage.
Ingestion	: Corrosive with symptoms of coughing, burning, ulceration, and pain. Symptoms of ingestion may include abdominal pain, nausea, vomiting, and diarrhea.

Potential chronic health effects

Short term exposure

Potential immediate effects	: Not available.
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Long term exposure

Potential delayed effects	: Not available.
General	: May cause damage to organs through prolonged or repeated exposure.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.

Section 11. Toxicological information

Fertility effects : No known significant effects or critical hazards.

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure	Test
ADOX™ 31	LD50 Oral	Rat	390 mg/kg * Test results on a product of similar composition	-	-
ADOX™ 31	LD50 Dermal	Rabbit	>2000 mg/kg * Test results on a product of similar composition	-	-
Sodium chlorite	LC50 Inhalation Dusts and mists	Rat	230 mg/m ³	4 hours	-

Irritation/Corrosion

Conclusion/Summary

Skin : Non-irritating
*Test results on a product of similar composition

Eyes : Severe irritant
* Test results on a product of similar composition

Sensitization

Product/ingredient name	Route of exposure	Species	Result
Sodium chlorite	skin	Guinea pig	Not sensitizing

Mutagenicity

Conclusion/Summary : Sodium chlorite:Not mutagenic in a standard battery of genetic toxicological tests. Did not show carcinogenic or mutagenic effects in animal experiments.

Carcinogenicity

Conclusion/Summary : Sodium chlorite:No carcinogenic effect.

Product/ingredient name	CAS #	IARC	NTP	OSHA
Sodium chlorite	7758-19-2	Not classified.	Not classified.	Not classified.

Reproductive toxicity

Conclusion/Summary : Sodium chlorite:Not considered to be toxic to the reproductive system.

Teratogenicity

Conclusion/Summary : Sodium chlorite:Teratogenic effects seen only with maternal toxicity

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
ADOX™ 31	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Sodium chlorite	Category 2	Not determined	spleen

Section 11. Toxicological information

Acute toxicity estimates

Route	ATE value (Acute Toxicity Estimates)
Not available.	

Section 12. Ecological information

Toxicity

Product/ingredient name	Test	Result	Species	Exposure
Sodium chlorite	-	Acute EC50 1 mg/l Fresh water	Algae - Scenedesmus capricornutum	96 hours
	-	Acute EC50 0.65 mg/l Marine water	Crustaceans - Mysidopsis bahia	96 hours
	OECD 202 <i>Daphnia</i> sp. Acute Immobilization Test	Acute EC50 <1 mg/l Fresh water	Daphnia - <i>Daphnia magna</i>	48 hours
	-	Acute LC50 106 mg/l Fresh water	Fish - <i>Oncorhynchus mykiss</i>	96 hours
	-	Chronic NOEC 0.62 mg/l Fresh water	Algae - Scenedesmus capricornutum	96 hours

Conclusion/Summary : Not available.

Persistence and degradability

Conclusion/Summary : Not available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Sodium chlorite	<-2.7	-	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.






Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Waste disposal should be in accordance with existing federal state, provincial and or local environmental controls laws.

RCRA classification : : When discarded in its purchased, undiluted form, this product meets the pH criteria of corrosivity, and should be managed as a hazardous waste (EPA Hazardous Waste Number D002). (40 CFR 261.20-24) Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product, should be classified as a hazardous waste. (40 CFR 261.20-24)

Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	UN1908	CHLORITE SOLUTION	8	II		A3, A6, A7, B2, IB2, N34, T7, TP2, TP24
IMDG Class	UN1908	CHLORITE SOLUTION	8	II	 	Emergency schedules (EmS) F-A, S-B
IATA-DGR Class	UN1908	CHLORITE SOLUTION	8	II	 	Passenger aircraft 851: 1 L Cargo aircraft 855: 30 L

PG* : Packing group

RQ : 0 lbs

Section 15. Regulatory information

SARA 311/312 : Immediate (acute) health hazard
Delayed (chronic) health hazard

SARA Title III Section 302 Extremely Hazardous Substances : None

SARA Title III Section 313 Toxic Chemicals : None

US EPA CERCLA Hazardous Substances (40 CFR 302.4) : None

State regulations

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections on the SDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

<u>Ingredient name</u>	<u>CAS number</u>	<u>State Code</u>	<u>Concentration (%)</u>
Sodium chlorite	7758-19-2	MA - S, NJ - HS, PA - RTK HS	31
Water	7732-18-5		69

Massachusetts Substances: MA - S

Massachusetts Extraordinary Hazardous Substances: MA - Extra HS

New Jersey Hazardous Substances: NJ - HS

Pennsylvania RTK Hazardous Substances: PA - RTK HS

Pennsylvania Special Hazardous Substances: PA - Special HS

California Prop. 65

To the best of our knowledge, this product does not contain any of the listed chemicals, which the state of California has found to cause cancer, birth defects or other reproductive harm.

U.S.Toxic Substances Control Act: Listed on the TSCA Inventory.

Section 16. Other information

Hazardous Material Information System	:	Health	*	3
		Flammability		1
		Physical hazards		0

0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme
*=Chronic

The customer is responsible for determining the PPE code for this material. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

National Fire Protection Association (U.S.A.) :



0= Minimal 1=Slight 2=Moderate 3=Serious 4=Severe

Our method of hazard communication is comprised of Product Labels and Safety Data Sheets. HMIS and NFPA ratings are provided as a customer service.

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Date of issue : 01-17-2018

Date of previous issue : 09-18-2017

Version : 5
Product Safety and Regulatory Affairs

▣ Indicates information that has changed from previously issued version.

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