

SECTION 1 - IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1 Product Identifier**TRADE NAME (AS LABELED):

CSI CD CARTRIDGE

CHEMICAL NAME/CLASS:

Oxidizing Solid

REACH REGISTRATION NUMBER:

This product is a mixture.

For REACH Registration Number See Section 3

1.2 Use of the Substance/PreparationIDENTIFIED USES:

Industrial and commercial use only.

1.3 Details of the Supplier of the Safety Data SheetMANUFACTURER/DISTRIBUTOR NAME & ADDRESS:

CLORDISYS SOLUTIONS, INC.

P.O. Box 549

Lebanon, NJ 08833

United States of America

+1-908-236-4100

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1.4 Emergency Telephone

CHEMTREC International

+1-703-527-3887

SECTION 2 - HAZARDS IDENTIFICATION**2.1 Classification of the substance or mixture****Classification (REGULATION (EC) No 1272/2008)**

Acute toxicity, Category 2, Oral, H300

Acute toxicity, Category 4, Inhalation, H332

Specific target organ toxicity – single exposure, Category 3, H335

- See Section 16 for full text of the H-Statements mentioned

Classification (67/548/EEC or 1999/45/EC)

T Toxic R23/24/25 – 36/37/38

O Oxidizer R8

- See Section 16 for full text of the R-phrases mentioned

2.2 Label elements**Labelling (REGULATION (EC) No 1272/2008)***Hazard pictograms*

Signal word

Danger



Hazard statements

- H300 - Fatal if swallowed
- H332 - Harmful if inhaled
- H335 - May cause respiratory irritation

Precautionary statements

- P101 - If medical advice is needed, have container label in hand
- P102 - Keep out of reach of children
- P103 - Read label before use
- P210 + P220 - Keep/store away from sparks/open flames/hot surfaces and combustible materials - No smoking
- P260 - Do not breathe dust
- P262 - Do not get in eyes, on skin, or on clothing
- P270 - Do not eat, drink or smoke when using this product
- P306 + P360 - IF ON CLOTHING: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes.
- P280 - Wear protective gloves/protective clothing/eye protection/face protection
- P301 + P310 + P330 - IF SWALLOWED: Rinse mouth, Do NOT induce vomiting, Immediately call a POISON CENTER or doctor/physician
- P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
- P305 + P313 + P351 - IF IN EYES: Rinse with water for several minutes, then get medical advice/attention
- P312 - Call a POISON CENTER or doctor/physician if you feel unwell.
- P370 + P380 + P375 - In case of fire: Evacuate area. Fight fire remotely due to risk of explosion
- P501 - Dispose of contents/container in accordance with local or national regulation.

Labelling (67/548/EEC or 1999/45/EC)

Symbol(s)		T	Toxic
		O	Oxidizer
<i>R-phrase(s)</i>	8 - 23/24/25 - 36/37/38		Contact with combustible material may cause fire. Toxic by inhalation, in contact with skin and if swallowed. Irritating to eyes, respiratory system and skin.
<i>S-phrase(s)</i>	2 - 17 - 26 - 27 - 36/37/39 - 46		Keep out of the reach of children. Keep away from combustible material. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Take off immediately contaminated clothing. Wear suitable protective clothing, glove and eye/face protection. If swallowed, seek medical advice immediately and show this container or label.

2.3 Other hazards

None known.

Ingestion: If this product is swallowed, DO NOT INDUCE VOMITING. CALL PHYSICIAN OR LOCAL POISON CONTROL CENTRE FOR GUIDANCE

Medical conditions aggravated by exposure: Preexisting dermatitis, other skin disorders, kidney disorders, liver disorders, and blood disorders may be aggravated by exposure to this product.

Recommendations to physicians: Treat symptoms and eliminate overexposure.

SECTION 5 - FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Water spray, Foam, Halon, Carbon dioxide, Dry Chemical, and any "ABC" class extinguishing media

Unsuitable extinguishing media

For this substance/mixture, no limitation of extinguishing agents are given.

5.2 Special hazards arising from the substance/mixture

This product is irritating and presents a moderate inhalation and contact hazard to firefighters. When involved in a fire, this material may decompose and produce irritating vapors and toxic gases (e.g., sodium oxides, hydrogen chloride). This product may become unstable at elevated temperatures. This product is an oxidizer; it can act to initiate and sustain the combustion of flammable materials.

Explosion Sensitivity to Mechanical Impact: Not sensitive.

Explosion Sensitivity to Static Discharge: Not sensitive.

5.3 Advice for firefighters

Prevent the spread of any released product to combustible objects.

Special protective equipment for fire-fighters

Firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Chemical resistant clothing may be necessary.

Further information

Move containers from fire area if it can be done without risk to personnel. Cool fire-exposed containers with water to prevent rupture. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas. Rinse contaminated equipment thoroughly before returning such equipment to service.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

In the case of accidental release, isolate the hazard area and deny entry. Prevent the spread of any released product to combustible objects. Fans and portable vacuum units can be used to increase ventilation if deemed necessary. For small releases, clean up spilled solid wearing solid rubber gloves, goggles, face-shield, and suitable body protection. The minimum Personal Protective Equipment recommended for response to non-incident releases should be solid rubber gloves, chemical resistant suit and boots, and Self-Contained Breathing Apparatus.

6.2 Environmental precautions

Keep out of water supplies and sewers. Releases should be reported, if required, to appropriate agencies

6.3 Methods and materials for containment and cleaning up

Sweep up or vacuum spilled solid. Test area with Starch-Iodide paper. If Starch-Iodide paper becomes discolored when in contact with an area moistened with water, neutralize area with 5% sodium thiosulfate solution. Place all spill residue in a suitable container. Dispose of in accordance with Section 13, Disposal Considerations.

6.4 Reference to other sections

Indications about waste treatment see Section 13

SECTION 7 - HANDLING AND STORAGE

7.1 Precautions for safe handling

All employees who handle this material should be trained to handle it safely. Keep container tightly closed when not in use. As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing dusts generated by this product. Use in a well-ventilated location. Remove contaminated clothing immediately.

7.2 Conditions for safe storage, including any incompatibilities

Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Store containers away from incompatible chemicals (see Section 10, Stability and Reactivity). Storage areas should be made of fire-resistant materials. Post warning and "NO SMOKING" signs in storage and use areas, as appropriate. Floors should be sealed to prevent absorption of this material. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Have appropriate extinguishing equipment in the storage area (e.g., sprinkler system, portable fire extinguishers). Empty containers may contain residual particulates; therefore, empty containers should be handled with care. Never store food, feed, or drinking water in containers that held this product.

Protective practices during maintenance of contaminated equipment

Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely if necessary.

Special requirements

Avoid contact with acid

7.3 Specific end uses

Specific end uses are mentioned in Section 1.2

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1 Control parameters**

Not applicable

8.2 Exposure controls*Engineering measures*

Use with adequate ventilation to ensure exposure levels are minimized. If existing ventilation is not adequate, product should be used with a local exhaust hood, or in ductless fume hood/portable ventilation system. All ventilation systems should pull air at or below the open container in order to pull dusts away from the person using the product. Ensure eyewash/safety shower stations are available near areas where this product is used.

Individual protection measures*Eye protection*

Chemical safety goggles.\

Respiratory protection

None required when handling chemical in a sealed container.

Hand protection

None required when handling chemical in a sealed container. When direct contact is possible, use butyl rubber, natural rubber, neoprene, or nitrile rubber gloves for routine use. Gloves should be changed frequently during use of product. Use solid rubber gloves for spill response, as stated in Section 6 (Accidental Release Measures) of this MSDS.

Body protection

None required when handling chemical in a sealed container. When direct contact is possible, use body protection appropriate for task (e.g., gown or apron).

Environmental exposure controls

Do not place near combustible materials, open flame or hot surfaces

SECTION 9 - Physical and chemical properties

9.1 Information on basic physical and chemical properties

APPEARANCE:	White, Flaky, Solid
ODOUR:	Slight chlorine
pH (25% Solution):	> 12
BOILING POINT:	Not established
MELTING/FREEZING POINT:	180-200°C (356-392°F)
FLASH POINT:	Not applicable
FLAMMABLE LOWER LIMIT (LEL):	Not applicable
FLAMMABLE UPPER LIMIT (UEL):	Not applicable
EXPLOSIVE PROPERTIES:	Non-explosive
AUTOIGNITION TEMPERATURE:	Not applicable
OXIDISING PROPERTIES:	5.1 Oxidizer
VAPOUR PRESSURE, mm Hg @ 20°C:	Not established
RELATIVE DENSITY:	828.15 kg / m ³ (51.7 lb/ft ³).
WATER SOLUBILITY @ 25°C:	39%
FAT SOLUBILITY:	Not established
SPECIFIC GRAVITY (water = 1):	Not established
RELATIVE VAPOUR DENSITY:	Not established
EVAPORATION RATE (n-BuAc = 1):	Similar to water
PARTITION COEFFICIENT (noctanol/water):	Not established
ODOR THRESHOLD:	Not established
VISCOSITY:	Not applicable

SECTION 10 - STABILITY and REACTIVITY

10.1 Chemical Stability/Reactivity

This product is chemically stable under normal temperature and pressure.

10.2 Possibility of hazardous reactions

Hazardous polymerisation will not occur.

10.3 Conditions to avoid

Avoid exposure to or contact with extreme temperatures, sources of ignition (flames, sparks, etc...), incompatible chemicals, and ultraviolet light.

10.4 Incompatible materials

Strong reducers, finely powdered metals, phosphorus, sulfur, zinc, organic materials, and combustible materials.

10.5 Hazardous decomposition products

Products of thermal decomposition include sodium oxides and hydrogen chloride gas.

SECTION 11 - TOXICOLOGICAL INFORMATION**11.1 Information on toxicological effects:**

The specific toxicology data available for the Sodium Chlorite component of this product are as follows. Data for other components are not given on this MSDS.

SODIUM CHLORITE:

Mutation in Microorganisms (*Salmonella typhimurium*) = 300 µg/plate

DNA Inhibition (oral, rat) = 84 mg/kg/12 weeks/continuous

Sperm Morphology (oral, rat) = 660 mg/kg/66 days/continuous

Micronucleus Test (intraperitoneal, mouse) = 15 mg/kg

Cytogenetic Analysis (fibroblast, hamster) = 20 mg/L

TDLo (oral, rat) = 365 mg/kg/1 year/continuous; Blood: pigmented or nucleated red blood cells, changes in other cell count (unspecified); Nutritional and Gross Metabolic: weight loss or decreased weight gain

TDLo (oral, rat) = 182 g/kg/26 weeks/intermittent; Liver function tests impaired; Changes in serum composition (e.g. TP, bilirubin, cholesterol), Enzyme inhibition, induction, or change in blood or tissue levels: phosphatases:

TDLo (oral, rat) = 800 mg/kg/female 8–15 days after conception; Reproductive: Effects on Embryo or Fetus: fetotoxicity (except death, e.g., stunted fetus)

TDLo (oral, rat) = 16 g/kg/female 8–15 days after conception; Reproductive: Fertility: post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants)

TDLo (oral, rat) = 660 mg/kg/male 66 days pre-mating; Reproductive: Paternal Effects: spermatogenesis (incl. genetic material, sperm morphology, motility, and count)

TDLo (oral, rat) = 1130 mg/kg/male 8 weeks pre-mating/female 2 weeks pre-mating: 3 weeks post-birth; Reproductive: Effects on Newborn: biochemical and metabolic

TDLo (intraperitoneal, rat) = 160 mg/kg/female 8–15 days after conception; Reproductive: Fertility: post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants)

TDLo (intraperitoneal, rat) = 80 mg/kg/female 8–15 days after conception; Reproductive: Effects on Embryo or Fetus: fetotoxicity (except death, e.g., stunted fetus)

TDLo (oral, mouse) = 29,750 mg/kg/85 weeks/continuous; Tumorigenic: Carcinogenic by RTECS criteria; Liver: tumors

TDLo (oral, mouse) = 22 g/kg/female 1–21 days after conception/lactating female 28 days post-birth; Reproductive: Effects on Newborn: growth statistics (e.g.%, reduced weight gain)

LD₅₀ (oral, rat) = 165 mg/kg; jaundice, other or unclassified; Kidney, Ureter, Bladder: interstitial nephritis; Biochemical: Metabolism (Intermediary): other

LC₅₀ (inhalation, rat) = 230 mg/m³/4 hours

LD₅₀ (dermal, rabbit) = > 50 – 400 mg/kg

LD₅₀ (oral, mouse) = 350 mg/kg

LD₅₀ (oral, guinea pig) = 300 mg/kg

11.2 Further information**Suspected cancer agent**

The components of this product are not found on the following lists: U.S. FEDERAL OSHA Z LIST, NTP, IARC, and CAL/OSHA and therefore are neither considered to be nor suspected to be cancer-causing agents by these agencies.

Irritancy of product

This product may be mildly to moderately irritating to contaminated tissue, including eyes, after prolonged or repeated exposure.

Sensitization to the product

This product is not known to be a skin or respiratory sensitizer.

Reproductive toxicity information

Listed below is information concerning the effects of this product and its components on animal and human reproductive systems.

Mutagenicity: This product is not reported to produce mutagenic effects in humans. Animal mutation data are available for the Sodium Chlorite component of this product; these data were obtained during clinical studies on specific human animal tissues exposed to high doses of these compounds.

Embryotoxicity: This product is not reported to produce embryotoxic effects in humans.

Teratogenicity: This product is not reported to cause teratogenic effects in humans. Clinical studies on test animals exposed to relatively high doses of the Sodium Chlorite component of this product provided teratogenic data.

Reproductive Toxicity: This product is not reported to cause reproductive effects in humans. Clinical studies on test animals exposed to relatively high doses of the Sodium Chlorite component of this product provided reproductive toxicity data.

- See Section 16 for Definitions of Terms Used.

SECTION 12 - ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

12.1 Toxicity

Effects of chemical on plant life

This product may be harmful to plant-life (especially if large quantities are released)

Effects of chemical on animal life

This product may be harmful to aquatic, invertebrate and other forms of animal life. Additional toxicity data are available for components of this product:

Sodium chlorite ecotoxicological effects

AQUATIC TOXICOLOGY

LC₅₀ *Onchorhynchus mykiss* (Rainbow trout) = 290mg/L as 80% NaClO₂ (96 hour)

LC₅₀ *Lepomis macrochirus* (Bluegill) 265-310 mg/L as 80% NaClO₂ (96 hour)

LC₅₀ *Cyprinodon variegates* (Sheepshead minnow) = 62-90 ppm (96 hour)

INVERTEBRATE TOXICOLOGY

LC₅₀ *Daphnia magna* (Water flea) = 0.29 mg/L as 80% NaClO₂ (48 hour)

OTHER TOXICOLOGY

LD₅₀ *Anas platyrhynchos* (Mallard duck) = 0.49-1.00 g/kg as 80% NaClO₂ (gavage)

LD₅₀ *Colinus virginianus* (Bob-white quail) = 0.66 g/kg as 80% NaClO₂ (gavage)

12.2 Persistence and degradability

The components of this product will slowly decompose into sodium chloride

12.3 Bioaccumulative potential

This material will not bioaccumulate

12.4 Mobility in soil

No information available

12.5 Results of PBT and vPvB assessment

No information available

12.6 Other adverse effects

No information available

SECTION 13 - DISPOSAL CONSIDERATIONS

Waste disposal methods

Waste disposal must be in accordance with appropriate EC Member States. Unused product, if unaltered, may be disposed of by treatment at a permitted facility or as advised by your local or national hazardous waste regulatory authority.

SECTION 14 - TRANSPORT INFORMATIONRID/ADR

UN#: 1496
CLASS: 5.1
PROPER SHIPPING NAME: Sodium chlorite
PACKING GROUP: PG II

IMDG

UN#: 1496
CLASS: 5.1
PROPER SHIPPING NAME: Sodium chlorite
PACKING GROUP: PG II
MARINE POLLUTANT: No
SEVERE MARINE POLLUTANT: No

IATA

UN#: 1496
CLASS: 5.1
PROPER SHIPPING NAME: Sodium chlorite
PACKING GROUP: PG II
INHALATION PACKING GROUP I: No

SECTION 15 - REGULATORY INFORMATION**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****EU Directives/Regulations**

- EU Directive 98/8/EC Annex I, or IA: Concern of placing biocidal products on the market
- EU Directive 76/769/EEC: Restrictions on the marketing and use of certain dangerous substances.
- EU Directive 98/24/EC: Chemical agents at work.
- EU Directive 2004/37/EC: The protection of workers
- EU Regulation (EC) No. 689/2008: Annex I, part 1: Export and import of dangerous chemicals
- EU Regulation (EC) No. 689/2008: Annex I, part 2: Export and import of dangerous chemicals
- EU Regulation (EC) No. 689/2008: Annex I, part 3: Export and import of dangerous chemicals
- EU Regulation (EC) No. 689/2008: Annex V: Export and import of dangerous chemicals
- EU REACH, Annex XVII: Restrictions on manufacture, placing on the market and use of certain dangerous substances, mixture & article.
- EU REACH, Annex XIV: Candidate list of substance of very high concern for authorization (SVHC).

No components of this material were found on the regulatory lists above

Chemical Inventories:

TSCA:	Listed
EC:	Listed
Japan:	Listed
Australia:	Listed
Korea:	Listed
DSL:	Listed
NDSL:	Not Listed
Phil.:	Listed

15.2 Chemical safety assessment

No data available

SECTION 16 - OTHER INFORMATION**PREPARED BY:**

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DATE OF PRINTING:

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MSDS REGULATION:

The content of this Material Safety Data Sheet is in accordance of:

- Commission Directive 2001/58/EC of 27 July 2001 amending for the second time Directive 91/155/EEC
- Regulation (EC) No 1907/2006, Article 31 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) requirements for Safety Data Sheets
- Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006

USES AND RESTRICTIONS:**Not for residential or household use**

DISCLAIMER: The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. ClorDiSys Solutions, Inc. assumes no responsibility for injury to the vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, ClorDiSys Solutions, Inc. assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in his use of the material.

DEFINITION OF TERMS

A large number of abbreviations and acronyms appear on a MSDS. Some of these which are commonly used include the following:

EC: Commission of the European Union

CAS #: Chemical Abstract Service Number which uniquely identifies each constituent.

EINECS#: European Inventory of Existing Chemical Substances

EC Number: European Commission Number

[O]: EC Annex II Hazard Symbol to denote the chemical as being an oxidizer

[T]: EC Annex II Hazard Symbol to denote the chemical as being toxic

EC RISK (R) PHRASES:

R8: Contact with combustible material may cause fire
R23/24/25: Toxic by inhalation, in contact with skin and if swallowed
R36/37/38: Irritating to eyes, respiratory system and skin

EC SAFETY (S) PHRASES:

S2: Keep out of the reach of children
S17: Keep away from combustible material
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advise
S27: Take off immediately all contaminated clothing
S36/37/39: Wear suitable protective clothing, glove and eye/face protection
S46: If swallowed, seek medical advise immediately and show this container or label

EC HAZARD (H) STATEMENTS

H300 Fatal if swallowed
H332 Harmful if inhaled
H335 May cause respiratory irritation

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (**NFPA**). **Flash Point** - Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable mixture with air. **Autoignition Temperature:** The minimum temperature required to initiate combustion in air with no other source of ignition. **LEL** - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. **UEL** - the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

TOXICOLOGICAL INFORMATION:

Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are: **LD₅₀** - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; **LC₅₀** - Lethal Concentration (gases) which kills 50% of the exposed animals; **ppm** concentration expressed in parts of material per million parts of air or water; **mg/m³** concentration expressed in weight of substance per volume of air; **mg/kg** quantity of material, by weight, administered to a test subject, based on their body weight in kg. Data from several sources are used to evaluate the cancer-causing potential of the material. The sources are: **IARC** - the International Agency for Research on Cancer; **NTP** - the National Toxicology Program, **RTECS** - the Registry of Toxic Effects of Chemical Substances, **OSHA** and **CAL/OSHA**. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. Other measures of toxicity include **TDLo**, the lowest dose to cause a symptom and **TCLo** the lowest concentration to cause a symptom; **TDo**, **LDLo**, and **LDo**, or **TC**, **TCo**, **LCLo**, and **LCo**, the lowest dose (or concentration) to cause lethal or toxic effects. **BEI** - Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV. Ecological Information: EC is the effect concentration in water. **REPRODUCTIVE TOXICOLOGICAL DEFINITIONS:** **Mutagen** - a chemical that causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines; **Embryotoxin** - a chemical that causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines; **Teratogen** - a chemical that causes damage to a developing fetus, but the damage does not propagate across generational lines.; **Reproductive toxin** - any substance that interferes in any way with the reproductive process.