SAFETY DATA SHEET

M31032 - ANSI - EN

CYANURIC ACID, DRY

SDS No.: M31032 **SDS Revision Date:** 12-Nov-2014

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Company Identification:	Occidental Chemical Corporation 5005 LBJ Freeway P.O. Box 809050 Dallas, TX 75380-9050 1-800-752-5151
24 Hour Emergency Telephone Number:	1-800-733-3665 or 1-972-404-3228 (USA); CHEMTREC (within USA and Canada): 1-800-424-9300; CHEMTREC (outside USA and Canada): +1 703-527-3887; CHEMTREC Contract No: CCN16186
To Request an SDS:	MSDS@oxy.com or 1-972-404-3245
Customer Service:	1-800-752-5151 or 1-972-404-3700
Product Identifier:	**CYANURIC ACID, DRY**
Synonyms:	1,3,5-Triazine-2,4,6 (1H,3H,5H)-trione, CYA, Cyanuric acid, 2,4,6-Trihydroxy-s-triazine, Isocyanuric acid, Symmetrical triazinetrione
Product Use:	Chlorine stabilizer for swimming pools, Flame retardant, Chemical Intermediate
Uses Advised Against:	None identified.

2. HAZARDS IDENTIFICATION

CYANURIC ACID, DRY

SDS No.: M31032 **SDS Revision Date:** 12-Nov-2014

OSHA REGULATORY STATUS: This material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

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EMERGENCY OVERVIEW:

Color: White to off-white
Physical state Solid
Appearance: Granules, Powder
Odor: Odorless

MAJOR HEALTH HAZARDS: MAY CAUSE SLIGHT EYE AND SKIN IRRITATION.

PRECAUTIONARY STATEMENTS: Avoid contact with skin and eyes. Wash thoroughly after handling.

ADDITIONAL HAZARD INFORMATION: Even though this material is not classified as hazardous according to US OSHA's 2012 Hazard Communication Standard, good hygiene and safety practices should be followed. Good hygiene practices include but are not limited to: wearing suitable gloves and/or eye protection; washing hands and affected skin immediately after handling, before breaks, and at the end of the workday; regularly cleaning work area and clothing; etc.

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GHS CLASSIFICATION:

Note: There is not a GHS classification associated with this non-hazardous material.

GHS: CARCINOGENICITY:	This product is not classified as a carcinogen by NTP, IARC or OSHA.

UNKNOWN ACUTE TOXICITY:
Not applicable. This product was tested as a whole. This information only pertains to untested mixtures.

GHS SYMBOL:
None

GHS SIGNAL WORD: **NONE, NOT OSHA HAZARDOUS CHEMICAL**

GHS HAZARD STATEMENTS:

Hazards Not Otherwise Classified (HNOC)
None identified

See Section 11: TOXICOLOGICAL INFORMATION

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: 1,3,5-Triazine-2,4,6 (1H,3H,5H)-trione, CYA, Cyanuric acid, 2,4,6-Trihydroxy-s-triazine, Isocyanuric acid, Symmetrical triazinetrione

Component	Percent [%]	CAS Number
Cyanuric acid	98 - 100	108-80-5

4. FIRST AID MEASURES

INHALATION: No effects expected. If adverse effects occur, remove to uncontaminated area. IF SYMPTOMS OF OVEREXPOSURE OCCUR, GET MEDICAL ATTENTION.

SKIN CONTACT: Wash contaminated areas with soap and water. IF IRRITATION PERSISTS, GET MEDICAL ADVICE/ATTENTION.

EYE CONTACT: Solids should be removed. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF IRRITATION OCCURS, GET MEDICAL ATTENTION.

INGESTION: No effect expected. IF LARGE AMOUNTS ARE INGESTED, GET MEDICAL ATTENTION.

Inhalation (Breathing): Inhaling powder or fine particulates of this material may cause respiratory tract irritation, cough.
Skin: Skin Irritation: Exposure to powder or fine particulates of this material may cause slight skin redness, irritation.
Eye: Eye Irritation: Eye exposure may cause mild irritation of the eye lids and conjunctiva.
Ingestion (Swallowing): No known effects.

Delayed Symptoms/Effects:
- No delayed / chronic effects have been identified

Interaction with Other Chemicals Which Enhance Toxicity: None known.

Medical Conditions Aggravated by Exposure: May aggravate preexisting conditions such as: eye disorders that decrease tear production or have reduced integrity of the eye; skin disorders that compromise the integrity of the skin; and respiratory conditions including asthma and other breathing disorders.

Protection of First-Aiders: Avoid contact with skin and eyes. Use personal protective equipment. Refer to Section 8 for specific personal protective equipment recommendations. At minimum, treating personnel should utilize PPE sufficient for prevention of bloodborne pathogen transmission.

Notes to Physician: This material causes mild irritation to skin and eyes. Removing the material via irrigation is usually sufficient. There is no antidote. Cyanuric acid is readily removed from the body via the renal system, and is not bioaccumulated. Treatment is supportive care.

5. FIRE-FIGHTING MEASURES

Fire Hazard: Negligible fire hazard.

Extinguishing Media: Use extinguishing agents appropriate for surrounding fire.

Fire Fighting: Move container from fire area if it can be done without risk. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Wear NIOSH approved positive-pressure self-contained breathing apparatus operated in pressure demand mode.

Hazardous Combustion Products: Cyanic acid, Ammonia, Oxides of carbon, Oxides of nitrogen

Sensitivity to Mechanical Impact: Not sensitive.

Sensitivity to Static Discharge: Not sensitive.

Lower Flammability Level (air): Not flammable

Upper Flammability Level (air): Not flammable

Flash point: Not flammable

Auto-ignition Temperature: Not applicable

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:
Avoid contact with eyes. Avoid generating dust. When handling this material, wear appropriate personal protective equipment recommended in Section 8, Exposure Controls / Personal Protection, of the SDS.

Methods and Materials for Containment and Cleaning Up:
Collect spilled material in appropriate container for disposal.

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

7. HANDLING AND STORAGE

Precautions for Safe Handling:
Use methods to minimize dust. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling. Wear personal protective equipment as described in Exposure Controls/Personal Protection (Section 8) of the MSDS.

Safe Storage Conditions:
Store and handle in accordance with all current regulations and standards. Store in a cool, dry area. Store in a well-ventilated area. Keep separated from incompatible substances (see below or Section 10 of the Safety Data Sheet).

Incompatibilities/ Materials to Avoid:
oxidizing agents

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Regulatory Exposure Limit(s): As listed below.

OEL: Occupational Exposure Limit; OSHA: United States Occupational Safety and Health Administration; PEL: Permissible Exposure Limit; TWA: Time Weighted Average; STEL: Short Term Exposure Limit

NON-REGULATORY EXPOSURE LIMIT(S): As listed below.

- *The Non-Regulatory United States Occupational Safety and Health Administration (OSHA) limits, if shown, are the Vacated 1989 PEL's (vacated by 58 FR 35338, June 30, 1993).*

- The American Conference of Governmental Industrial Hygienists (ACGIH) is a voluntary organization of professional industrial hygiene personnel in government or educational institutions in the United States. The ACGIH develops and publishes recommended occupational exposure limits each year called Threshold Limit Values (TLVs) for hundreds of chemicals, physical agents, and biological exposure indices.

Additional Advice: Even though this material is not classified as hazardous according to US OSHA's 2012 Hazard Communication Standard, good hygiene and safety practices should be followed. Good hygiene practices include but are not limited to: wearing suitable gloves and/or eye protection; washing hands and affected skin immediately after handling, before breaks, and at the end of the workday; regularly cleaning work area and clothing; etc.

ENGINEERING CONTROLS: General or local exhaust ventilation and other forms of engineering controls are the preferred means for controlling exposures. Ensure compliance with applicable exposure limits.

PERSONAL PROTECTIVE EQUIPMENT:

Eye Protection: Use good hygiene practices when handling this material. If eye contact is likely, wear chemical resistant safety goggles.

Skin and Body Protection: Use good hygiene practices when handling this material. As a good hygiene practice, wear protective clothing to minimize skin contact such as standard industrial work clothes, coveralls, safety footwear. Contaminated clothing should be removed and laundered before reuse.

Protective Material Types: Butyl rubber, Natural rubber, Neoprene, Nitrile, Polyvinyl chloride (PVC)

Respiratory Protection: No personal respiratory protective equipment normally required. A NIOSH approved respirator with N95 (dust, fume, mist) cartridges may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits, or when symptoms have been observed that are indicative of overexposure. In dusty or misty atmospheres use an approved particulate respirator. A respiratory protection program that meets 29 CFR 1910.134 must be followed whenever workplace conditions warrant use of a respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Solid
Appearance:	Granules, Powder
Color:	White to off-white
Odor:	Odorless
Molecular Weight:	129.08
Molecular Formula:	H3C3N3O3
Decomposition Temperature:	662-680 °F (350 - 360 °C) (sublimes)
Boiling Point/Range:	Not applicable to solids
Freezing Point/Range:	Not applicable to solids.
Melting Point/Range:	Decomposes without melting
Vapor Pressure:	0.000001 Pa @ 25 °C
Vapor Density (air=1):	Not applicable
Relative Density - Specific Gravity (water=1):	1.75
Density:	1.75 g/mL @ 25 °C
Bulk Density:	50-56 lbs/ft3 (loose)
Water Solubility:	0.2% @ 25 °C
pH:	4.8 (saturated solution)
Volatility:	No data available
Evaporation Rate (ether=1):	Not applicable
Partition Coefficient (n-octanol/water):	Kow = 0.049 @25 °C
Flash point:	Not flammable
Flammability (solid, gas):	Not flammable
Lower Flammability Level (air):	Not flammable
Upper Flammability Level (air):	Not flammable
Auto-ignition Temperature:	Not applicable
Viscosity:	Not applicable

10. STABILITY AND REACTIVITY

Reactivity: Not reactive under normal temperatures and pressures.

Chemical Stability: Stable at normal temperatures and pressures.

Possibility of Hazardous Reactions:
Avoid contact with incompatible materials.

Conditions to Avoid:
(e.g., static discharge, shock, or vibration) -. None known.

Incompatibilities/ Materials to Avoid:
oxidizing agents

Hazardous Decomposition Products: Cyanic acid, Ammonia, oxides of carbon, Oxides of nitrogen

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

IRRITATION DATA: PRIMARY SKIN IRRITATION: Slightly irritating (rabbit)
PRIMARY EYE IRRITATION: Mildly irritating (rabbit)

IRRITATION: Contact with this material may cause mild, reversible irritation to the eys and skin. Based on the mild reaction seen in the test anmals, it is not classified as an irritant by OSHA.

TOXICITY DATA:

PRODUCT TOXICITY DATA: CYANURIC ACID DRY

LD50 Oral:	LD50 Dermal:	LC50 Inhalation:
3400 mg/kg (Mouse), 7700 mg/kg (Rat)	> 5000 mg/kg (Rabbit)	> 5.25 mg/L (4 hr - Rat)

COMPONENT TOXICITY DATA:

Component	LD50 Oral:	LD50 Dermal:	LC50 Inhalation:
Cyanuric acid 108-80-5	7700 mg/kg (Rat)	2000 mg/kg (Rabbit)	-----

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POTENTIAL HEALTH EFFECTS:

Eye contact: May cause mild eye irritation.

Skin contact: May cause slight skin irritation.

Inhalation: No known effects. Inhalation of powder or fine particulates may cause irritation, cough.

Ingestion: No known effects.

SIGNS AND SYMPTOMS OF EXPOSURE:

Inhalation (Breathing): Inhaling powder or fine particulates of this material may cause respiratory tract irritation, cough.
Skin: Skin Irritation: Exposure to powder or fine particulates of this material may cause slight skin redness, irritation.
Eye: Eye Irritation: Eye exposure may cause mild irritation of the eye lids and conjunctiva.
Ingestion (Swallowing): No known effects.

TOXICITY:
This material is believed to be non-toxic by inhalation, dermal exposure and ingestion. Monosodium cyanurate was administered via drinking water to rats for 104 weeks at concentrations of 0, 400, 1200, 2400, and 5375 ppm (solubility limit). No compound-related effects on body weights, clinical signs of toxicity or food or water consumption were noted during the study. An increased incidence of gross lesions in the urinary tract, calculi in the kidney and lesions in the heart were observed in males receiving the highest dose level of 5375 ppm (solubility limit). The health effects seen in this study were due to precipitation of the test substance in the urinary tract when the test substance was fed at the solubility limit. Adverse health effects were not seen at lower doses where precipitation did not occur.

Interaction with Other Chemicals Which Enhance Toxicity: None known

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GHS HEALTH HAZARDS:
This material is not classified as hazardous according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) There is not a GHS classification associated with this non-hazardous material

GHS: CARCINOGENICITY:
This product is not classified as a carcinogen by NTP, IARC or OSHA.

MUTAGENIC DATA:
Not classified as a mutagen per GHS criteria. Not mutagenic in 5 Salmonella strains and 1 E. coli strain with or without mammalian microsomal activation.

REPRODUCTIVE TOXICITY:
Not classified as a reproductive toxin per GHS criteria
There are no known or recorded effects on reproductive function or fetal development

12. ECOLOGICAL INFORMATION

ECOTOXICITY DATA:

Aquatic Toxicity:
This material is believed to be practically non-toxic to aquatic life.

Fish Toxicity:
LC50 Bluegill sunfish: >1000 mg/L (96 hour)
LC50 Rainbow trout: >2100 mg/L (96 hour)
LC50 Fathead minnow: >2100 mg/L (96 hour)
LC50 Inland silversides: >8000 (96 hour)

Invertebrate Toxicity:
LC50 Water flea: >1000 mg/L (48 hour)
LC50 Mysid shrimp: 4438 mg/L (96 hour)

Algae Toxicity:
EC50 Green algae: 655-712 mg/L (96 hour)
EC50 Navicula pelliculosa: >3780 mg/L (96 hour)

FATE AND TRANSPORT:

BIODEGRADATION: Cyanuric acid biodegrades readily under a wide variety of natural conditions, and particularly well in systems of either low or zero dissolved-oxygen levels.

PERSISTENCE: This material is believed not to persist in the environment. Cyanuric acid has an estimated Henry's Law Constant of 1.36 X 10(-18) atm-m3/mol. Atmosphere half-life is estimated to be 102 days. Cyanuric acid will have a high soil mobility based on KOC values ranging from 66 to 124.

BIOCONCENTRATION: Aquatic bioconcentration and adsorption are not expected to be important fate processes for cyanuric acid. The BCF for cyanuric acid is <0.5 at 1 mg/L for a 6-week duration.

MOBILITY IN SOIL: Cyanuric acid will have a high soil mobility based on KOC values ranging from 66 to 124.

ADDITIONAL ECOLOGICAL INFORMATION: Cyanuric acid is toxic to certain plants including barley and radishes due to acidic nature of material.

13. DISPOSAL CONSIDERATIONS

Waste from material:
Reuse or recycle if possible. Dispose in accordance with all applicable regulations.

Container Management:
Dispose of container in accordance with applicable local, regional, national, and/or international regulations. Container rinsate must be disposed of in compliance with applicable regulations.

14. TRANSPORT INFORMATION

LAND TRANSPORT

U.S. DOT 49 CFR 172.101:

Status: Not regulated

CANADIAN TRANSPORTATION OF DANGEROUS GOODS:

Status: Not regulated

15. REGULATORY INFORMATION

U.S. REGULATIONS

OSHA REGULATORY STATUS:
This material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):
Not regulated.

SARA EHS Chemical (40 CFR 355.30)
Not regulated

EPCRA SECTIONS 311/312 HAZARD CATEGORIES (40 CFR 370.10):
None

EPCRA SECTION 313 (40 CFR 372.65):
Not regulated.

OSHA PROCESS SAFETY (PSM) (29 CFR 1910.119):
Not regulated

NATIONAL INVENTORY STATUS

U.S. INVENTORY STATUS: Toxic Substance Control Act (TSCA): All components are listed or exempt.

TSCA 12(b): This product is not subject to export notification.

Canadian Chemical Inventory: All components of this product are listed on either the DSL or the NDSL.

STATE REGULATIONS

There are no applicable state regulations for this product or its components.

CANADIAN REGULATIONS
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

WHMIS - Classifications of Substances:
• Not a controlled product under Canada's Workplace Hazardous Information System

16. OTHER INFORMATION

Prepared by: OxyChem Corporate HESS - Product Stewardship

Rev. Date: 12-Nov-2014

HMIS: (SCALE 0-4) (Rated using National Paint & Coatings Association HMIS: Rating Instructions, 2nd Edition)

Health Rating: 1 **Flammability Rating:** 0 **Reactivity Rating:** 0

NFPA 704 - Hazard Identification Ratings (SCALE 0-4)

Health Rating: 1 **Flammability:** 0 **Reactivity Rating:** 0

Reason for Revision:
• Three year review
• Changed the North American sub-format name from "NA" to "ANSI"
• Updated the (M)SDS header
• Updated 24 Hour Emergency Telephone Number: SEE SECTION 1
• Product Identifier has been added or updated: SEE SECTION 1
• Added synonym(s): SEE SECTION 1
• Updated Uses Advised Against information: SEE SECTION 1
• Added OSHA Status: SEE SECTION 2
• The Emergency Overview Signal word has been added or changed. SEE SECTION 2
• Added GHS Information: SEE SECTION 2
• Added synonym(s): SEE SECTION 3
• Updated First Aid Measures: SEE SECTION 4
• Modified Fire Fighting Measure Recommendations: SEE SECTION 5
• Revised Accidental Release Measures: SEE SECTION 6
• Revised Handling and Storage Recommendations: SEE SECTION 7
• Revised Exposure Controls/Personal Protection information: SEE SECTION 8
• Updated Physical and Chemical Properties. SEE SECTION 9
• Stability and Reactivity recommendations: SEE SECTION 10
• Toxicological Information has been revised: SEE SECTION 11
• Ecological Information has been modified: SEE SECTION 12
• Updated Disposal Considerations. SEE SECTION 13
• Regulatory Information Changes: SEE SECTION 15
• Revised Preparer Information: SEE SECTION 16
• Added SDS Revision Date: SEE SECTION 16
• A component has been added to the formulation. SEE SECTION 2.

CYANURIC ACID, DRY

IMPORTANT:
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OSHA Standard 29 CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, safety data sheets, training and access to written records. We request that you, and it is your legal duty to, make all information in this Safety Data Sheet available to your employees

End of Safety Data Sheet