



MSDS Number: 00002

Effective Date: 02/10/2003

Product Name: Anox™ 20 Powder, Anox™ 20
Granular and Anox™ 20 NDB™

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SECTION I - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Anox™ 20 Powder, Anox™ 20 Granular and Anox™ 20 NDB™
Manufacturer: Great Lakes Chemical Corporation
Address: P.O. Box 2200 **City:** West Lafayette
State: Indiana **Zip:** 47996-2200
Emergency Telephone Number: 1-800-949-5167
Information Telephone Number: 1-765-497-6100 **Fax:** 1-765-497-6123
Chemtrec Phone: 1-800-424-9300; Internationally call 703-527-3887
Effective Date: 02/10/2003 **Supersede Date:** 05/18/2000
MSDS Prepared By: Regulatory Affairs Department/Great Lakes Chemical Corporation
Synonyms: Tetrakis(methylene(3,5-di-tert-butyl-4-hydroxy-hydrocinnamate))methane;
Hydrocinnamic acid, 3,5-di-tert-butyl-4-hydroxy-, tetraester with pentaerythritol;
Lowinox PP 35
Product Use: Antioxidant
Chemical Name: Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-, 2,2-bis[[3-[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropoxy]methyl]-1,3-propanediyl ester
Chemical Family: Sterically hindered phenol

Additional Information

No information available

SECTION II - COMPOSITION/INFORMATION ON INGREDIENTS

| INGREDIENT NAME | CAS NO. | % | EXPOSURE LIMITS |
|--|---------|-----|--|
| Tetrakis(methylene(3,5-di-tert-butyl-4-hydroxy-hydrocinnamate))methane | 6683198 | >96 | N (Hazardous) 15 mg/m3 (PNOR) (OSHA PEL TWA) Not established (OSHA PEL STEL) Not established (OSHA PEL CEIL) 10 mg/m3 (PNOC) (ACGIH TLV TWA) Not established (ACGIH TLV STEL) Not established (ACGIH TLV CEIL) |

*Indented chemicals are components of previous ingredient.

Additional Information

5 mg/m3 Respirable Dust Level (OSHA)
3 mg/m3 Respirable Dust Level (ACGIH)
PNOR = Particulates Not Otherwise Regulated
PNOC = Particulates Not Otherwise Classified

SECTION III - HAZARDS IDENTIFICATION

Emergency Overview: White to off-white powder, granules or pellets
No odor
Not expected to be a hazard in normal industrial use.
Dusts can form an explosive mixture with air.

Relevant Routes of Exposure: Inhalation and ingestion.

Signs and Symptoms of Overexposure: No known signs and symptoms of exposure.

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SECTION III - HAZARDS IDENTIFICATION

Medical Conditions Generally

Aggravated By Exposure: None reported
Potential Health Effects: See Section XI for additional information.

Eyes: Not expected to be a hazard in normal industrial use.
As with any dust, mechanical irritation is possible to the eye.
Skin: Not expected to be a hazard in normal industrial use.
As with any dust, mechanical irritation is possible to the skin.
Ingestion: Not expected to be a hazard in normal industrial use.
Inhalation: As with any dust, mechanical irritation is possible to mucous
membranes and the respiratory tract.
Chronic Health Effects: None known

Carcinogenicity:

| | | | |
|--------------|----|---------------|----|
| NTP: | No | ACGIH: | No |
| IARC: | No | OTHER: | No |
| OSHA: | No | | |

Additional Information

No information available

SECTION IV - FIRST AID MEASURES

Eyes: Flush with large volumes of water for at least 15 minutes. Get medical attention.
Skin: Wash with large volumes of soap and water for at least 15 minutes. If irritation develops, get medical attention.
Ingestion: If conscious, give person 1 to 2 glasses of water. Get medical attention immediately.
Inhalation: Remove person to fresh air. Get medical attention.
Antidotes: No information available
Notes to Physicians and/or
Protection for First-Aiders: No information available

Additional Information

No information available

SECTION V - FIRE FIGHTING MEASURES

Flammable Limits in Air (% by Volume): Not available
Flash Point: 298 degrees C (Closed Cup)
Autoignition Temperature: Not available
Extinguishing Media: All conventional media are suitable.
A strong jet stream of water is not suitable.
Fire Fighting Instructions: Wear a self-contained breathing apparatus and protective clothing to prevent skin and eye contact in fire situations.
Unusual Fire and Explosion Hazards: Under fire conditions, toxic and irritating fumes may be emitted.
Dusts can form an explosive mixture with air.
Flammability Classification: Combustible dust
Known or Anticipated Hazardous Products of Combustion: Carbon monoxide and carbon dioxide

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SECTION V - FIRE FIGHTING MEASURES

Additional Information

No information available

SECTION VI - ACCIDENTAL RELEASE MEASURES

Accidental Release Measures: Shut off all sources of ignition.
Wearing appropriate personal protective equipment, carefully sweep up material and place in suitable labeled containers for disposal.
Avoid creating a dusting condition.
Use only non-sparking tools.
Wash spill area after pick-up is complete, collecting all clean up water for appropriate disposal.

Personal Precautions: See Section VIII.

Environmental Precautions: Avoid releasing to the environment.

Additional Information

No information available

SECTION VII - HANDLING AND STORAGE

Handling: Use appropriate personal protection equipment.
Avoid eye, skin and clothing contact.
Avoid breathing dust.
Avoid repeated and prolonged contact.
Avoid creating a dusting situation.
Prevent buildup of static electricity.
All equipment should be properly grounded.

Storage: Store in a cool, dry, well-ventilated area away from incompatible materials.
Keep container tightly closed.
Store away from heat, sparks, and flame.
Protect containers against damage.
Keep material in supplier's packaging.

Other Precautions: Avoid contact of material with open flames.

Additional Information

No information available

SECTION VIII - EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Adequate general ventilation is recommended when handling to control airborne levels.

Ventilation Requirements: Use local exhaust to minimize dusting.
Use mechanical ventilation for general area control.

Personal Protective Equipment:

Eye/Face Protection: Chemical safety glasses with side shields or chemical safety goggles

Skin Protection: Gloves - PVC
Do not wear textile or leather gloves.
Clothing designed to minimize skin contact

Respiratory Protection: Wear a NIOSH/MSHA approved dust respirator if dusting occurs, or there is potential for airborne exposures to exceed established threshold values.

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SECTION VIII - EXPOSURE CONTROLS/PERSONAL PROTECTION

Consult the OSHA respiratory protection information located at 29CFR 1910.134 and the American National Standard Institute's Practices of Respiratory Protection Z88.2.

Other Protective Clothing or Equipment: No information available
Exposure Guidelines: See Section II.
Work Hygienic Practices: Wash thoroughly after handling.
Wash contaminated clothing before reuse.
Do not eat, drink, chew gum, use tobacco products, or apply cosmetics in work areas.

Additional Information

No information available

SECTION IX - PHYSICAL & CHEMICAL PROPERTIES

| | | | |
|---|--|---|---|
| Appearance: | White to off-white powder, granules or pellets | Percent Volatile: | Not available |
| Boiling Point: | 1130.3 degrees C (calculated) | pH Value: | Not available |
| Bulk Density: | Not available | pH Concentration: | Not available |
| Color: | White to off-white | Physical State: | Solid |
| Decomposition Temperature: | Not available | Reactivity in Water: | Not water reactive |
| Evaporation Rate: | Not available | Saturated Vapor Concentration: | Not available |
| Freezing Point: | Not available | Softening Point: | Not available |
| Heat Value: | Not available | Solubility in Water: | Insoluble |
| Melting Point: | 110-125 degrees C | Specific Gravity or Density (Water=1): | 1.15 (d 20/4) |
| Molecular/Chemical Formula: | C73H108O12 | Vapor Density: | Not available |
| Molecular Weight: | 1176.5 | Vapor Pressure: | 1 x 10 ⁽⁻¹²⁾ at 20 degrees C |
| Octanol/Water Partition Coefficient: | Log Pow = 23 | Viscosity: | Not available |
| Odor: | No odor | Volatile Organic Compounds: | Not available |
| Odor Threshold: | Not available | Water/Oil Distribution Coefficient: | Not available |
| Particle Size: | Not available | Weight Per Gallon: | Not available |

Additional Information

Minimum Ignition Energy: Between 1 mJ and 3 mJ
Minimum Ignition Temperature: 420 degrees C

SECTION X - STABILITY AND REACTIVITY

Stability: Stable under normal conditions of handling and use.
Conditions to Avoid: Ignition sources and dusting
Incompatibility With Other Materials: Strong oxidizers
Hazardous Decomposition Products: Thermal decomposition may produce the following:
Carbon monoxide and carbon dioxide
Hazardous Polymerization: Will not occur

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SECTION X - STABILITY AND REACTIVITY

Conditions to Avoid: None

Additional Information

No information available

SECTION XI - TOXICOLOGICAL INFORMATION

| VALUE (LD50 OR LC50) | ANIMAL | ROUTES | COMPONENTS |
|----------------------|--------|------------------|--|
| >46 mg/L/1H | Rat | Acute Inhalation | Tetrakis(methylene(3,5-di-tert-butyl-4-hydroxy-hydrocinnamate))methane |
| >3,160 mg/kg | Rabbit | Acute Dermal | Tetrakis(methylene(3,5-di-tert-butyl-4-hydroxy-hydrocinnamate))methane |
| >5,000 mg/kg | Rat | Acute Oral | Tetrakis(methylene(3,5-di-tert-butyl-4-hydroxy-hydrocinnamate))methane |

Toxicological Information:

Tetrakis(methylene(3,5-di-tert-butyl-4-hydroxy-hydrocinnamate))methane: This material has been determined not to be a primary eye or skin irritant in rabbits. Negative results were found in a sensitization study in guinea pigs. Negative mutagenicity results were obtained in an Ames test, a dominant lethal assay, a somatic mutation assay, and a reverse mutation assay.

In a 13 week repeated dose study in beagle dogs at doses of 1,000, 3,000, and 10,000 ppm, no adverse effects could be related to treatment.

In a two generation reproductive study at doses of 1,000, 3,000 and 10,000 ppm, no reproductive effects were seen.

Teratogenicity studies in rats and mice have shown negative results.

Additional Information

No information available

SECTION XII - ECOLOGICAL INFORMATION

Ecological Information:

EC50 in Daphnia magna (24 hour) >86 mg/L
LC50 in Zebra fish (96 hour) >100 mg/L
LC50 in Salmo gairdneri (96 hour) = 49 mg/L
EC50 in Algae (72H) >100 mg/L
EC50 in Escherichia coli (3H) >100 mg/L

A photodegradation half-life has been estimated at 1.2 hours.

Partially biodegradable

Avoid releasing to the environment.

Additional Information

No information available

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SECTION XIII - DISPOSAL CONSIDERATIONS

Disposal Considerations: Dispose of waste at an approved chemical disposal facility in compliance with all current Local, State/Province, Federal/Canadian laws and regulations.

Additional Information

No information available

SECTION XIV - TRANSPORT INFORMATION

U.S. DOT

| | | | |
|----------------------------------|---------------|------------------------------|-----|
| Proper Shipping Name: | Not regulated | ID Number: | N/A |
| Hazard Class: | N/A | Labels: | N/A |
| Packing Group: | N/A | Packaging Exceptions: | N/A |
| Special Provisions: | N/A | Bulk Packaging: | N/A |
| Non-Bulk Packaging: | N/A | Air Cargo Limit: | N/A |
| Passenger Air/Rail Limit: | N/A | Other Stowage: | N/A |
| Vessel Stowage: | N/A | | |
| Reportable Quantity: | N/A | | |

AIR - ICAO OR IATA

| | | | |
|--------------------------------|---------------|------------------------------|-----|
| Proper Shipping Name: | Not regulated | ID Number: | N/A |
| Hazard Class: | N/A | Packing Group: | N/A |
| Subsidiary Risk: | N/A | Packing Instructions: | N/A |
| Hazard Labels: | N/A | Packing Instruction - | |
| Air Passenger Limit Per | | Cargo: | N/A |
| Package: | N/A | Special Provisions | N/A |
| Air Cargo Limit Per | | Code: | |
| Package: | N/A | | |

WATER - IMDG

| | | | |
|--------------------------------|---------------|-------------------------|-----|
| Proper Shipping Name: | Not regulated | ID Number: | N/A |
| Hazard Class: | N/A | Subsidiary Risk: | N/A |
| Packing Group: | N/A | | |
| Medical First Aid Guide | | | |
| Code: | N/A | | |

Additional Information

No information available

SECTION XV - REGULATORY INFORMATION

U.S. Federal Regulations:

The components of this product are either on the TSCA Inventory or exempt (i.e. impurities, a polymer complying with the exemption rule at 40 CFR 723.250) from the Inventory.

State Regulations:

No information available

International Regulations:

This material (or each component) is listed on the following inventories:

Canada - DSL

EU - EINECS

Australia - AICS

Japan - ENCS

Korea - ECL

Philippines - PICCS

China - List I

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SECTION XV - REGULATORY INFORMATION

Canadian WHMIS Hazard Class and Division = Not controlled

SARA Hazards:

| | | | |
|------------------|----|-----------------|----|
| Acute: | No | Chronic: | No |
| Reactive: | No | Fire: | No |
| Pressure: | No | | |

Additional Information

The above regulatory information represents only selected regulations and is not meant to be a complete list.

SECTION XVI - OTHER INFORMATION

NFPA Codes:

| | | | |
|--------------------|---|----------------------|---|
| Health: | 0 | Flammability: | 1 |
| Reactivity: | 0 | Other: | 0 |

HMIS Codes:

| | | | |
|--------------------|---|----------------------|---|
| Health: | 0 | Flammability: | 1 |
| Reactivity: | 0 | Protection: | X |

* indicates chronic health hazard.

Label Statements:

Not available

Other Information:

Abbreviations:

(L) = Loose bulk density in g/ml

LOEC = Lowest observed effect concentration

MATC = Maximum acceptable toxicant concentration

NA = Not available

N/A = Not applicable

NL = Not limited

NOAEL = No observable adverse effect level

NOEC = No observed effect concentration

NOEL = No observable effect level

NR = Not rated

(P) = Packed bulk density in g/ml

PNOC = Particulates Not Otherwise Classified

PNOR = Particulates Not Otherwise Regulated

REL = Recommended exposure limit

TS = Trade secret

Additional Information

Information on this form is furnished solely for the purpose of compliance with OSHA's Hazard Communication Standard, 29CFR 1910.1200 and The Canadian Environmental Protection Act, Canada Gazette Part II, Vol. 122, No. 2 and shall not be used for any other purpose.

Revision Information:

General review and update

Section IX - Physical properties

Section XI - Toxicological information

Section XII - Ecological Information