

FORMATION AID (PEO)



THE DOW CHEMICAL COMPANY **MATERIAL SAFETY DATA SHEET**



Product Name: SENTRY(TM) POLYOX(TM) WSR 303 -

Effective Date: 02/18/2004

LEO NF GRADE

MSDS#: 1487

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Dow (hereinafter, and for purposes of this MSDS only, refers to The Dow Chemical Company and to Dow Chemical Canada Inc.) encourages and expects you to read and understand the entire MSDS, as there is important information throughout the document. Dow expects you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

1.1 IDENTIFICATION

Product Name SENTRY(TM) POLYOX(TM) WSR 303 - LEO NF GRADE

1.2 COMPANY IDENTIFICATION

The Dow Chemical Company
Midland, MI 48674

1.3 EMERGENCY TELEPHONE NUMBER

24-HOUR EMERGENCY TELEPHONE NUMBER: (989)636-4400.

Customer Information Number: 1-800-258-2436.

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2. COMPOSITION INFORMATION

Component	CAS #	Amount (%W/W)
Poly(ethylene oxide)	25322-68-3	>= 95 %
Fumed silica (generic)	112945-52-5	<= 3%
Calcium as mixed salts	Not available	<= 1%
BHT	128-37-0	<= 0.1%
Ammonia	7664-41-7	<= 0.02%
Monoethylamine	75-04-7	<= 0.02%
Ethylene oxide	75-21-8	<= 0.001%

3. HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Appearance White to off-white

Physical State Powder

Odor Ammoniacal

Hazards of product
WARNING!
CAUSES EYE IRRITATION.
STATIC IGNITION HAZARD CAN RESULT FROM HANDLING AND USE.
DUST DISPERSED IN AIR MAY BE IGNITED AND BURN RAPIDLY.
PLASTIC CONTAINER, IF PRESENT, MAY CAUSE STATIC IGNITION HAZARD.
SLIPPERY WHEN WET.

3.2 POTENTIAL HEALTH EFFECTS

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Effects of Single Acute Overexposure

Inhalation Dust may cause irritation of the respiratory tract, experienced as nasal discomfort and discharge.

Eye Contact Dust may cause discomfort in the eye with slight excess redness and possibly swelling of the conjunctiva.

Skin Contact No evidence of harmful effects from available information.

Skin Absorption No evidence of harmful effects from available information.

Swallowing Slightly toxic. May cause abdominal discomfort, nausea, vomiting and diarrhea.

Chronic, Prolonged or Repeated Overexposure

Effects of Repeated Overexposure This product may contribute to nuisance dusts and possibly to respirable dusts. Avoid breathing dusts.

Other Effects of Overexposure None currently known.

Medical Conditions Aggravated by Exposure

A knowledge of the available toxicology information and of the physical and chemical properties of the material suggests that overexposure is unlikely to aggravate existing medical conditions.

See Section 11 for toxicological information and additional information about potential health effects.

3.3 POTENTIAL ENVIRONMENTAL EFFECTS

See Section 12 for Ecological Information.

4. FIRST AID PROCEDURES

4.1 INHALATION

No emergency care anticipated.

4.2 EYE CONTACT

Immediately flush eyes with water and continue washing for several minutes. Remove contact lenses, if worn. Obtain medical attention.

4.3 SKIN CONTACT

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Wash skin with plenty of water.

4.4 SWALLOWING

If a large quantity (several ounces) has been swallowed, and if patient is fully conscious, give two glasses of water. Induce vomiting. This should be done only by medical or experienced first-aid personnel. Obtain medical attention.

4.5 NOTES TO PHYSICIAN

There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES - REFER TO SECTION 9, PHYSICAL AND CHEMICAL PROPERTIES

5.2 EXTINGUISHING MEDIA

Extinguish fires with water spray or apply alcohol-type or all-purpose-type foam by manufacturer's recommended techniques for large fires. Use carbon dioxide or dry chemical media for small fires.

5.3 FIRE FIGHTING PROCEDURES

Do not direct a solid stream of water or foam into burning molten material; this may cause spattering and spread the fire. Fire fighters and others involved in a fire situation should be aware that this material in contact with water can create an extremely slippery walking surface.

5.4 SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Use self-contained breathing apparatus and protective clothing.

5.5 UNUSUAL FIRE AND EXPLOSION HAZARDS

Avoid dispersion of dust in air to reduce potential for dust ignition/explosions. Dust is easily ignited; avoid ignition sources. Handle and convey in inert nitrogen-blanketed atmospheres. Refer to National Fire Protection Association Document NFPA 69 for descriptions of explosion prevention systems.

Static ignition hazard can result from handling and use. Electrically bond and ground all containers, personnel and equipment before transfer or use of material. Special precautions may be necessary to dissipate static electricity for non-conductive containers. Use proper bonding and grounding during product transfer as described in National Fire Protection Association Document NFPA 77.

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For POLYOX WSR products in flexible intermediate bulk containers, a static ignition hazard can result from handling and use. Non-conductive containers cannot be grounded. For transfers between flexible intermediate bulk containers and another non-conductive container, special precautions may be necessary to dissipate static electricity. For conductive components (containers, personnel, equipment) use proper bonding and grounding during product transfer as described in National Fire Protection Association Document NFPA 77. Refer to National Fire Protection Association Document NFPA 69 for descriptions of explosion prevention systems.

5.6 HAZARDOUS COMBUSTION PRODUCTS

Burning can produce the following products: Carbon monoxide and/or carbon dioxide. Carbon monoxide is highly toxic if inhaled; carbon dioxide in sufficient concentrations can act as an asphyxiant.

6. ACCIDENTAL RELEASE MEASURES

Steps to be Taken if Material is Released or Spilled:

Remove spills promptly. Floors can be slippery where this product has been spilled, especially when wet. Vacuum up solids or liquid spills as thoroughly as possible. Apply a 10% soda ash (sodium carbonate) solution to the surface and collect. Note that a 10% soda ash solution is caustic. If soda ash is not available, laundry bleach may be used; if used, allow to stand one hour and flush thoroughly with water. Collect liquid for disposal and rinse the surface thoroughly with water. Repeat if necessary. See Section 8.2 - Personal Protection.

Personal Precautions: Wear suitable protective equipment. Floor may be slippery. Use care to avoid falling.

7. HANDLING AND STORAGE

7.1 HANDLING

General Handling

Avoid contact with eyes.

Electrically bond and ground all containers, personnel and equipment before transfer or use of material.

Maintain proper grounding at all times.

Avoid heat, sparks and flame under dust conditions.

Do not handle or empty in presence of flammable vapor.

Keep container closed.

Use with adequate ventilation.

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Clean up spills.
Wash thoroughly after handling.

FOR INDUSTRY USE ONLY.

Ventilation

Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines. Use only with adequate ventilation.

7.2 STORAGE

Store in accordance with good industrial practices. Storage information may be obtained from product-specific Storage and Handling Guides, or by calling Dow's Customer Information Group at 1-800-258-2436 (U.S.) or 1-800-331-6451 (Canada).

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

8.1 EXPOSURE LIMITS

Component	Exposure Limits	Skin. Form
Poly(ethylene oxide)	10 mg/m3 TWA8 AIHA WEEL	Aerosol
Fumed silica (generic)	10 mg/m3 TWA8 ACGIH 3 mg/m3 TWA8 ACGIH 20 mppcf, or (80 mg/m3) / % SiO2 TWA8 OSHA	Inhalable Particulate Respirable particulate
BHT	2 mg/m3 TWA8 ACGIH	Aerosol and Vapor Inhalable fraction
Ammonia	25 ppm TWA8 ACGIH 35 ppm STEL ACGIH 50 ppm TWA8 OSHA 35 mg/m3 TWA8 OSHA	
Monoethylamine	5 ppm TWA8 ACGIH 15 ppm STEL ACGIH 10 ppm TWA8 OSHA 18 mg/m3 TWA8 OSHA	Yes Yes
Ethylene oxide	1 ppm TWA8 ACGIH 1 ppm TWA8 OSHA 5 ppm Excursion Limit OSHA	

In the Exposure Limits Chart above, if there is no specific qualifier (i.e., Aerosol) listed in the Form Column for a particular limit, the listed limit includes all airborne forms of the substance that can be inhaled.

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A "Yes" in the Skin Column indicates a potential significant contribution to overall exposure by the cutaneous (skin) route, including mucous membranes and the eyes, either by contact with vapors or by direct skin contact with the substance. A "Blank" in the Skin Column indicates that exposure by the cutaneous (skin) route is not a potential significant contributor to overall exposure.

8.2 PERSONAL PROTECTION

- Respiratory Protection:** Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required, use an approved air-purifying or positive-pressure supplied-air respirator depending on the potential airborne concentration.
For emergency and other conditions where the exposure guideline may be exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply.
In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure airline with auxiliary self-contained air supply.
- Ventilation:** Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.
Use only with adequate ventilation.
- Eye Protection:** Monogoggles
- Protective Gloves:** PVC-coated
Neoprene
Butyl
- Other Protective Equipment:** Eye Bath, Safety Shower

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8.3 ENGINEERING CONTROLS

Dust explosion hazard: See Section 5.6 - Unusual Fire and Explosion Hazards - regarding dust explosion hazard.

FIBC: For Flexible Intermediate Bulk Containers - before transferring material, ground workers and conductive equipment to dissipate static electricity.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Powder

Appearance: White to off-white

Odor: Ammoniacal

Flash Point - Closed Cup: *No test data available.*

Flammable Limits In Air:

Lower *No test data available.*
Upper *No test data available.*

Autoignition Temperature: 280 - 330 °C 536 - 626 °F

Vapor Pressure: *No test data available.*

Boiling Point (760 mmHg): *No test data available.*

Vapor Density (air = 1): *No test data available.*

Specific Gravity (H₂O = 1): *Not applicable.*

Bulk Density: 500 kg/m³

Freezing Point: *No test data available.*

Melting Point: 62 - 67 °C 143 - 153 °F , Crystalline melting point

Solubility in Water (by weight): *No test data available.*

pH: *No test data available.*

Molecular Weight: 100000 - 8000000 g/mol

Percent Volatiles: < 1.0 Wt%

10. STABILITY AND REACTIVITY

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10.1 STABILITY/INSTABILITY Stable.

10.2 HAZARDOUS POLYMERIZATION

Will not occur.

11. TOXICOLOGICAL INFORMATION

The following information is based on analogy with a similar material.

ACUTE TOXICITY

Peroral

Rat; female; LD50 = > 4.0 g/kg

Percutaneous

Rat; female; LD50 = > 2.0 g/kg; 4 h occluded contact.

IRRITATION

Skin.: Rabbit; 4-hour occluded contact; 0.5 g; moistened with water

Results: no irritation

Eye: Rabbit; 0.5 ml; 5% in water

Results: no irritation

REPEATED EXPOSURE

Fourteen days of inclusion of POLYOX Water Soluble Resin in the diet of rats at 50000 ppm resulted in only the presence of loose feces. No effects were seen at 20000 ppm.

CHRONIC TOXICITY AND CARCINOGENICITY

Inclusion of POLYOX Water Soluble Resin in the diet of rats for 2 years at 20000 ppm (1000-1300 mg/kg/day) did not result in treatment-related effects or evidence of oncogenicity.

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CARCINOGENICITY CLASSIFICATIONS

Component	Agency	Classification
Ethylene oxide	OSHA IARC NTP ACGIH	Cancer Hazard Warning Group 1: Carcinogenic to Humans Known to be Human Carcinogen A2: Suspected Human Carcinogen

SIGNIFICANT DATA WITH POSSIBLE RELEVANCE TO HUMANS

Pharmacokinetic and material balance studies conducted with a radiocarbon labeled water soluble POLYOX Resin showed nearly total quantitative recovery of the material in feces, with insignificant amounts in blood and tissues, indicating the material is not absorbed from the gastrointestinal tract.

12. ECOLOGICAL INFORMATION

12.1 ENVIRONMENTAL FATE

Information may be available, call Dow.

12.2 ECOTOXICITY

Toxicity to Aquatic Invertebrates

Daphnia; 48 h; LC50

Result value: 7550 mg/L

Toxicity to Fish

Fathead Minnow; 96 h; LC50

Result value: > 10000 mg/L

12.3 FURTHER INFORMATION

None.

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13. DISPOSAL CONSIDERATIONS

13.1 DISPOSAL

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. DOW HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION 2 (Composition/ Information on Ingredients). FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Landfill. As a service to its customers, Dow can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums. Telephone Dow's Customer Information Group at 1-800-258-2436 or 1-989-832-1556 (U.S.), or 1-800-331-6451 (Canada) for further details .

14. TRANSPORT INFORMATION

14.1 U.S. D.O.T.

NON-BULK

Proper Shipping Name : NOT REGULATED

BULK

Proper Shipping Name : NOT REGULATED

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

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15. REGULATORY INFORMATION

15.1 FEDERAL/NATIONAL

OSHA HAZARD COMMUNICATION STANDARD

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 TITLE III (EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT OF 1986) SECTION 313

This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act 1986 and which are listed in 40 CFR Part 372.

To the best of our knowledge this product does not contain chemicals at levels which require reporting under this statute.

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT OF 1980 (CERCLA) SECTION 103

This product contains the following substances which are subject to CERCLA Section 103 reporting requirements and which are listed in 40 CFR 302.4.

Component	CAS #	Amount
Ammonia	7664-41-7	<= 0.0200%
Monoethylamine	75-04-7	<= 0.0200%
Ethylene oxide	75-21-8	<= 0.0010%

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 TITLE III (EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT OF 1986) SECTION 302

This product contains the following substances which are subject to SARA Section 302 reporting requirements and which are listed in 40 CFR 302.4.

To the best of our knowledge this product does not contain chemicals at levels which require reporting under this statute.

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SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 TITLE III (EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT OF 1986) SECTIONS 311 AND 312

Delayed (Chronic) Health Hazard : No
Fire Hazard : No
Immediate (Acute) Health Hazard : Yes
Reactive Hazard : No
Sudden Release of Pressure Hazard : No

TSCA INVENTORY STATUS

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30.

15.2 STATE/LOCAL

PENNSYLVANIA (WORKER AND COMMUNITY RIGHT-TO-KNOW ACT)

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

To the best of our knowledge this product does not contain chemicals at levels which require reporting under this statute.

PENNSYLVANIA (WORKER AND COMMUNITY RIGHT-TO-KNOW ACT)

The following product components are cited in the Pennsylvania Special Hazardous Substance List, and are present at levels which require reporting.

To the best of our knowledge this product does not contain chemicals at levels which require reporting under this statute.

CALIFORNIA PROPOSITION 65 (SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986)

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WARNING: This product contains a chemical(s) known to the State of California to cause cancer. WARNING: This product contains a chemical(s) known to the State of California to cause birth defects or other reproductive harm.

CALIFORNIA SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD) RULE 443.1:

VOC: Volatiles = Substances with a vapor pressure of > 0.5 mmHg @ 104 °C (219.2 °F)
0.0 g/l
0.00 g/l of material less water and less exempted solvents.

This section provides selected regulatory information on this product including its components. This is not intended to include all regulations. It is the responsibility of the user to know and comply with all applicable rules, regulations and laws relating to the product being used.

16. OTHER INFORMATION

16.1 ADDITIONAL INFORMATION

Additional information on this product may be obtained by calling Dow's Customer Information Group at 1-800-258-2436 (U.S.) or 1-800-331-6451 (Canada).

Ask for the brochure:
POLYOX WSR Storage and Handling (report).

16.2 HAZARD RATING SYSTEM

NFPA ratings for this product are: H - 0 F - 1 R - 0

These ratings are part of a specific hazard communication program and should be disregarded where individuals are not trained in the use of this hazard rating system. You should be familiar with the hazard communication programs applicable to your workplace.

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16.3 RECOMMENDED USES AND RESTRICTIONS

FOR INDUSTRY USE ONLY

16.4 REVISION

Version: 5.0

Revision: 02/18/2004

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

16.5 LEGEND

Bacterial/NA	Non Acclimated Bacteria
F	Fire
H	Health
IHG	Industrial Hygiene Guideline
N/A	Not available
NFPA	National Fire Protection Association
O	Oxidizer
R	Reactivity
TS	Trade secret
VOL/VOL	Volume/Volume
W	Water Reactive
WW	Weight/Weight

NOTICE: Dow urges each customer or recipient of this MSDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this MSDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given., Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that its activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of Dow, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product., Due to the proliferation of sources for information such as manufacturer-specific MSDSs, Dow is not and cannot be responsible for MSDSs obtained from any source other than Dow. If you have obtained a Dow MSDS from a non-Dow source or if you are not sure that a Dow MSDS is current, please contact Dow for the most current version.