# MATERIAL SAFETY DATA SHEET

PREPARED TO U.S. OSHA, CMA, ANSI AND CANADIAN WHMIS STANDARDS

## PART I  What is the material and what do I need to know in an emergency?

### 1. PRODUCT IDENTIFICATION

**TRADE NAME (AS LABELED):** IMPELRODS™

**CHEMICAL NAME/CLASS:** Sodium Borate Derivative

**SYNONYMS:**
- Anhydrous Disodium Octaborate (Na$_2$B$_8$O$_{13}$) Polybor
- Formulating Fungicides and Wood Preservative

**PRODUCT USE:** Formulating Fungicides and Wood Preservative

**SUPPLIER/MANUFACTURER’S NAME:** CHEMICAL SPECIALTIES, Inc.

**ADDRESS:**
One Woodlawn Green, Ste. 250
Charlotte, NC 28217

**EMERGENCY PHONE:**
704-455-5181
CHEMTREC: 800-424-9300
704-522-0825

**BUSINESS PHONE:**

**MSDS PREPARATION DATE:**
June 1, 2000

### 2. COMPOSITION and INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>CHEMICAL NAME</th>
<th>CAS #</th>
<th>% v/v</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>EXP. LIMITS IN AIR</th>
<th>ETS/TEIL</th>
<th>PEL</th>
<th>STEL</th>
<th>IDLH</th>
<th>OTHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anhydrous Disodium Octaborate</td>
<td>12008-41-2</td>
<td>100%</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
</tr>
</tbody>
</table>

**Note:**
- NE = Not Established
- C = Ceiling Limit
- See Section 16 for Definitions of Terms Used.

**NOTE:** ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-1993 format.
3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: This product consists of, clear, hard, glass-like rods. This product presents negligible health, fire, or reactivity hazards under typical emergency conditions. If involved in a fire, this product will decompose to produce toxic gases (e.g., boron compounds). Emergency responders must wear personal protective equipment appropriate for the situation to which they are responding.

SYMPTOMS OF OVEREXPOSURE BY ROUTE OF EXPOSURE:
There is no health hazard anticipated to occur during routine use of this product. The symptoms of such overexposures are described in the following paragraphs.

INHALATION: Though unlikely to occur, a minor hazard may exist via inhalation of particulates generated by the product. At the most, exposure to the dusts cause mild irritation of the respiratory system, or mucous membranes. Symptoms of such exposure may include redness, itching, or coughing.

CONTACT WITH SKIN or EYES: Though unlikely to occur, contact with dusts generated by this product and the skin or eyes may lead to mild irritation.

SKIN ABSORPTION: Exposure via skin absorption will not occur with product.

INGESTION: Though very unlikely to occur in an occupational setting, if this product is ingested, symptoms may include nausea and vomiting.

INJECTION: Injection of this product (via punctures with contaminated, sharp objects or pre-existing breaks in the skin) can produce redness, local swelling, and tissue damage at the injection site.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms. Symptoms of overexposure to this solution may include the following:

ACUTE: Symptoms of short-term exposure to dusts generated by this product may cause irritation to the eyes, skin and respiratory system. If ingested, nausea and vomiting may occur.

CHRONIC: Prolonged or repeated skin overexposure to dusts generated by this product may lead to dermatitis (inflamed, dry skin) and chapping. Refer to Section 11 (Toxicological Information) for further information on the component of this product Anhydrous Disodium Octaborate.

TARGET ORGANS: Skin, eyes, respiratory system (to dusts only).

4. FIRST-AID MEASURES

SKIN EXPOSURE: If dusts generated by this product contaminates the skin, begin decontamination with running water. Flush for 15 if any adverse reaction occurs.

EYE EXPOSURE: If dusts generated by this product enters the eyes, open victim's eyes while under gently running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 15 minutes.

INHALATION: If dusts generated by this product are inhaled, remove victim to fresh air.

INGESTION: If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, do not induce vomiting. Victim should drink milk or large quantities of water. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow.

Chemically contaminated personnel must be taken for medical attention if any adverse effect occurs. Take a copy of label and MSDS to physician or health-care professional with victim.
5. FIRE-FIGHTING MEASURES

FLASH POINT: Not applicable.
AUTOIGNITION TEMPERATURE, EC: Not applicable.
FLAMMABLE LIMITS (in air by volume, %):
   Lower (LEL): Not applicable.
   Upper (UEL): Not applicable.

FIRE EXTINGUISHING MATERIALS: This product is not flammable. Use fire extinguishing material appropriate for the surrounding area.
Water Spray: YES  Carbon Dioxide: YES  Foam: YES
Dry Chemical: YES  Halon: YES  Other: Any "ABC" Class.

UNUSUAL FIRE AND EXPLOSION HAZARDS: This product presents no unusual hazard to fire-fighters if involved in a fire.
Explosion Sensitivity to Static Discharge: Not sensitive.

SPECIAL FIRE-FIGHTING PROCEDURES: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Move fire-exposed containers if it can be done without risk to firefighters. If possible, firefighters should control run-off water to prevent environmental contamination.

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Due to the nature of this product, no special accidental release measures are normally required. Uncontrolled releases involving other materials released near this product should be responded to by appropriately trained personnel using pre-planned procedures. Dispose of in accordance with U.S. Federal, State, and local hazardous waste disposal regulations and the applicable standards of Canada and its Provinces (see Section 13, Disposal Considerations).

PART III  How can I prevent hazardous situations from occurring?

7. HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: If during the use of this product, dusts or particulates are generated, avoid breathing, or skin or eye contact. Use ventilation and other engineering controls to minimize creation and exposure to dusts generated by this product.

STORAGE AND HANDLING PRACTICES: Store this product in properly labeled, closed containers in a cool, dry location. Store this product in a cool, dry location, away from sources of intense heat. Store away from incompatible materials (see Section 10, Stability and Reactivity).

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, as necessary.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: No special ventilation and engineering controls are required for use of this product.
RESPIRATORY PROTECTION: No special respiratory protection is required for use of this product. Respiratory protection is required for firefighters, as authorized in the Federal OSHA Standard (29 CFR 1910.134) or applicable U.S. State and Canadian federal and provincial regulations.
EYE PROTECTION: No special eye protection is required for use of this product. Wear safety glasses or goggles if during the use of this product operations may produce flying debris or particulates.
HAND PROTECTION: Wear rubber or plastic gloves if prolonged contact, or contact with dusts, is anticipated.
BODY PROTECTION: No special body protection is required for use of this product.
9. PHYSICAL and CHEMICAL PROPERTIES

The following information is applicable for pure Anhydrous Disodium Octaborate:

RELATIVE VAPOR DENSITY (air = 1): Not applicable. EVAPORATION RATE (n-BuAc=1): Not applicable.
SPECIFIC GRAVITY (water = 1): 2.2 MELTING/FREEZING POINT: 100°C (1832°F)
SOLUBILITY IN WATER: Soluble. BOILING POINT: Not established.
VAPOR PRESSURE, mm Hg @ 20 °C: Not applicable. pH: Not applicable.
ODOR THRESHOLD: Not applicable. LOG of OIL/WATER DISTRIBUTION (PARTITION COEFFICIENT): Not applicable.

The following information is applicable for this product:

APPEARANCE AND COLOR: This product consists of clear, hard, glass-like rods.

HOW TO DETECT THIS SUBSTANCE (warning properties): The appearance may act as distinguishing characteristic of this product.

10. STABILITY and REACTIVITY

STABILITY: Stable.

DECOMPOSITION PRODUCTS: When exposed to decomposition temperatures, boron compounds will be produced.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: None currently reported.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Avoid exposure to extremely high temperatures.

PART IV Is there any other useful information about this material?

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: Additional toxicology data for pure Anhydrous Disodium Octaborate are provided below.

Oral-Rat LD₅₀: 2000 mg/kg Oral-Guinea Pig, adult LD₅₀: 5300 mg/kg

SUSPECTED CANCER AGENT: Anhydrous Disodium Octaborate is not found on the following lists: FEDERAL OSHA Z LIST, NTP, IARC, CAL/OSHA, and therefore are not considered to be, or suspected to be, cancer-causing agents by these agencies.

IRRITANCY OF PRODUCT: Dusts generated by this product may be mildly irritating to contaminated tissues.

SENSITIZATION TO THE PRODUCT: The product is not reported to cause sensitization effects in humans after prolonged or repeated exposures.

REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects of this product and its components on the human reproductive system.

Mutagenicity: This product is not reported to produce mutagenic effects in humans.

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

Teratogenicity: This product is not reported to cause teratogenic effects in humans.

Reproductive Toxicity: This product is not reported to cause reproductive effects in humans.

A mutagen is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An embryotoxin is a chemical which 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. A teratogen is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance which interferes in any way with the reproductive process.

ACGIH BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, there are no ACGIH Biological Exposure Indices (BEIs) associated with the components of this product.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Skin disorders may be aggravated by exposure to this product. Overexposures to dusts of this product may aggravate respiratory conditions.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and eliminate overexposure.
12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

ENVIRONMENTAL STABILITY: In the environment, this compound will hydrate to form Disodium Octaborate Tetrahydrate. All work practices should be aimed at preventing environmental contamination.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: Refer to Section 11 (Toxicology Information) for specific data on the product’s effects on test animals. This product is used specifically as an insecticide.

EFFECT OF CHEMICAL ON AQUATIC LIFE: Because this product is used as a pesticide, it may be harmful or fatal to exposed aquatic life, especially if released in large quantities.

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate U.S. Federal, State, and local regulations or those of Canada and its Provinces. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority.

U.S. EPA WASTE NUMBER: Not applicable to wastes consisting only of this product.

PESTICIDE DISPOSAL: Pesticide wastes are considered to be acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use, according to the label instruction, contact the appropriate U.S. State Pesticide or Environmental Control Agency, the Hazardous Waste Representative at the nearest EPA Regional Office, or the offices of Environment Canada for guidance.

CONTAINER DISPOSAL: If necessary, triple rinse (or equivalent), then offer the container for recycling or reconditioning. Alternatively, puncture the container and dispose of in a procedure approved by State and local authorities.

14. TRANSPORTATION INFORMATION

THIS MATERIAL IS NOT HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME: Not applicable.
HAZARD CLASS NUMBER and DESCRIPTION: Not applicable.
UN IDENTIFICATION NUMBER: Not applicable.
PACKING GROUP: Not applicable.
DOT LABEL(S) REQUIRED: Not applicable.
NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER, 1996: Not applicable.
MARINE POLLUTANT: No component of this product is designated as a Marine Pollutant, per Appendix B to 49 CFR 172.101.
TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: THIS MATERIAL IS NOT CONSIDERED AS DANGEROUS GOODS.

15. REGULATORY INFORMATION

U.S. SARA REPORTING REQUIREMENTS: Anhydrous Disodium Octaborate is not subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

U.S. SARA THRESHOLD PLANNING QUANTITY: Not applicable.

U.S. CERCLA REPORTABLE QUANTITY (RQ): Not applicable.

U.S. TSCA INVENTORY STATUS: This product is not subject to the requirements of TSCA because it is regulated under the Federal Insecticide, Fungicide, and Rodenticide Act.

OTHER U.S. FEDERAL REGULATIONS: This product is subject to the requirements of the Federal Insecticide, Fungicide, and Rodenticide Act. EPA Registration Number: 10324-3-10465.

U.S. STATE REGULATORY INFORMATION: Components in this product, specifically listed in Section 2 (Composition and Information on Ingredients), are not covered under specific State regulations, as denoted below:

Alaska - Designated Toxic and Hazardous Substances: No.
California - Permissible Exposure Limits for Chemical Contaminants: No.
Illinois - Toxic Substance List: No.
Kansas - Section 302/313 List: No.
Massachusetts - Substance List: No.

Michigan - Critical Materials Register: No.
Minnesota - List of Hazardous Substances: No.
Missouri - Employer Information/Toxic Substance List: No.
New Jersey - Right to Know Hazardous Substance List: No.
North Dakota - List of Hazardous Chemicals, Reportable Quantities: No.

Pennsylvania - Hazardous Substance List: No.
Rhode Island - Hazardous Substance List: No.
Texas - Hazardous Substance List: No.
West Virginia - Hazardous Substance List: No.
Wisconsin - Toxic and Hazardous Substances: No.

16. REGULATORY INFORMATION (Continued)
CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): Anhydrous Disodium Octaborate is not on the California Proposition 65 lists.

LABELING (Precautionary Statements):

ANSI STANDARD LABEL INFORMATION (Z129.1):

CAUTION! DUSTS MAY CAUSE IRRITATION TO EYES, SKIN, AND RESPIRATORY PROTECTION. Avoid contact with skin or eyes. Wash thoroughly after handling. Wear gloves and goggles when dusts are anticipated. FIRST-AID: In case of contact with skin or eyes, flush skin with plenty of water for 15 minutes. If inhaled, remove to fresh air. If swallowed, do not induce vomiting. Get medical attention if adverse effects develop. IN CASE OF FIRE: Use water fog, dry chemical, CO₂, or “alcohol” foam. IN CASE OF SPILL: Pick-up rods or sweep-up dusts. Consult Material Safety Data Sheet for additional information.

ADDITIONAL CANADIAN REGULATIONS:

CANADIAN DSL/NDSL INVENTORY STATUS: This product is not subject to Environment Canada’s requirements pertaining to the DSL or NDSL, because it is regulated under the Pest Control Products Act.

OTHER CANADIAN REGULATIONS: The Pest Control Products Act.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LIST: The components of this product are not on the CEPA Priorities Substances Lists.

CANADIAN WHMIS SYMBOLS: Not applicable.

16. OTHER INFORMATION

PREPARED BY: CHEMICAL SAFETY ASSOCIATES, Inc.
9163 Chesapeake Drive, San Diego, CA 92123-1002
619/565-0302

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

CAS # - This is the Chemical Abstract Service Number which uniquely identifies each constituent. It is used for computer-related searching.

DEFINITIONS OF TERMS

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

CAS #: This is the Chemical Abstract Service Number which uniquely identifies each constituent. It is used for computer-related searching.

EXPOSURE LIMITS IN AIR:

TLV - Threshold Limit Value - an airborne concentration of a substance which represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour Time Weighted Average (TWA), the 15-minute Short Term Exposure Limit, and the instantaneous Ceiling Level (C). Skin absorption effects must also be considered.

OSHA - U.S. Occupational Safety and Health Administration. PEL - Permissible Exposure Limit - This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, “Vacated 1989 PEL,” is placed next to the PEL which was vacated by Court Order.

IDLH - Immediately Dangerous to Life and Health - This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury. The DFG - MAK is the Republic of Germany’s Maximum Exposure Level, similar to the U.S. PEL. NIOSH is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. Occupational Safety and Health Administration (OSHA). NIOSH issues exposure guidelines called Recommended Exposure Levels (RELs). AIHA-WEEL is the American Industrial Hygiene Association Workplace Environmental Exposure Level Guidelines. When no exposure guidelines are established, an entry of NE is made for reference.

HAZARD RATINGS:

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM:

Health Hazard: 0 (minimal acute or chronic exposure hazard); 1 (slight acute or chronic exposure hazard); 2 (moderate acute or significant chronic exposure hazard); 3 (severe acute exposure hazard; onetime overexposure can result in permanent injury and may be fatal); 4 (extreme acute exposure hazard; onetime overexposure can be fatal).

Flammability Hazard: 0 (minimal hazard); 1 (materials that require substantial pre-heating before burning); 2 (combustible liquid or solids; liquids with a flash point of 38-93°C [100-200°F]); 3 (Class IB and IC flammable liquids with flash points below 38°C [100°F]); 4 (Class IA flammable liquids with flash points below 23°C [73°F] and boiling points below 38°C [100°F]).

Reactivity Hazard: 0 (normally stable); 1 (material that can become unstable at elevated temperatures or which can react slightly with water); 2 (materials that are unstable but do not detonate or which can react violently with water); 3 (materials that can detonate when initiated or which can react explosively with water); 4 (materials that can detonate at normal temperatures or pressures).

NATIONAL FIRE PROTECTION ASSOCIATION:

Health Hazard: 0 (material that on exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials); 1 (materials that on exposure under fire conditions could cause irritation or minor residual injury); 2 (materials that on intense or continued exposure under fire conditions could cause temporary incapacitation or possible residual injury); 3 (materials that can on short exposure could cause serious temporary or residual injury); 4 (materials that under very short exposure causes death or major residual injury).

NATIONAL FIRE PROTECTION ASSOCIATION (Continued):

Flammability Hazard and Reactivity Hazard: Refer to definitions for “Hazardous Materials Identification System”.

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 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:

Human and Animal Toxicology: 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. Other measures of toxicity include TLD₀, the lowest dose to cause a symptom and TÇLo the lowest concentration to cause a symptom; TDo, LDo, and LDe, or TC, TCo, LCo, and LÇo, the lowest dose (or concentration) to cause lethal or toxic effects. Cancer Information: 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 Information: BEI - ACGIH 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. BCF = Bioconcentration Factor, which is used to determine if a substance will concentrate in lifeforms which consume contaminated plant or animal matter. Coefficient of Oil/Water Distribution is represented by log Kow or log Kow and is used to assess a substance’s behavior in the environment.

REGULATORY INFORMATION:

This section explains the impact of various laws and regulations on the material. U.S.: EPA is the U.S. Environmental Protection Agency. DOT is the U.S. Department of Transportation. SARA is the Superfund Amendments and Reauthorization Act. TSCA is the U.S. Toxic Substance Control Act. CERCLA (or Superfund) refers to the Comprehensive Environmental Response, Compensation, and Liability Act. Labeling is per the American National Standards Institute (ANSI Z129.1). CANADA: CEPA is the Canadian Environmental Protection Act. WHIMS is the Canadian Workplace Hazardous Materials Information System. TC is Transport Canada. DSL/NDSL are the Canadian Domestic/Non-Domestic Substances Lists.