NORTHLAND PIONEER COLLEGE

HAZARD COMMUNICATION PROGRAM

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Attachment: Northland Pioneer College's Chemical Inventory

1. PURPOSE

Northland Pioneer College is firmly committed to providing each of its employees a safe and healthy work environment. To ensure that information about the dangers of all hazardous chemicals used by Northland Pioneer College is known by all affected employees, the following hazardous information program has been established. The purpose of this policy is to protect our employees, as well as the public and students from injuries or illnesses that may result from exposure to hazardous chemicals or substances within our workplace.

This program applies to all instructional activities and work operations in Northland Pioneer College where you may be exposed to hazardous chemicals under normal working conditions or during an emergency situation

2. RESPONSIBILITIES

The designated Hazard Communication Coordinator is listed in Appendix A.

The specific responsibilities of the **Hazard Communication Coordinator** include:

- Maintaining an up-to-date Hazard Communication Program.
- Ensuring that a Hazardous Chemicals Inventory List exists for Northland Pioneer College and is up to date.
- Ensuring that Northland Pioneer College has a copy of a Material Safety Data Sheet (MSDS) for each chemical utilized at its campuses.
- Ensuring that an adequate supply of hazard warning labels is maintained.
- Ensuring that general hazard communication training is provided to all applicable employees.
- Maintaining training records for employees who have completed Hazard Communication training and keeping them up to date.
- Keeping a master copy of the Hazard Communication program and all MSDSs on file.

Each **Dean and Director** has the following responsibility:

- Ensuring that materials are properly labeled within their areas of responsibility.
- Ensuring that MSDSs are obtained with any new materials received and that this information is communicated to the Hazardous Communication Coordinator.
- Ensuring that each employee is trained on any non-routine chemicals that may be used in their work areas.

Each **employee** is responsible for learning and following the requirements developed under this program.

3. ACCESS TO THE WRITTEN PROGRAM

All or any part of this written Hazard Communication Program is available to employees, their designated representatives, the Assistant Secretary of Labor for Occupational Safety and Health (OSHA), and the Director of the National Institute for Occupational Safety and Health (NIOSH).

The designated locations of this program are listed in Appendix A for review and copying.

4. HAZARD DETERMINATION AND INVENTORY

The initial hazard determination of chemicals is performed by manufacturers or importers. Every hazardous substance known to be present in the workplace at Northland Pioneer College will be listed on the Hazardous Chemicals Inventory List. This list will serve as an index to the MSDS files. A copy of Northland Pioneer College's chemical inventory is attached to this document. The identity of the substance appearing on the Hazardous Chemicals Inventory List will be the same name that appears on the manufacturer's label, in-house label, and the MSDS for the substance.

5. MATERIAL SAFETY DATA SHEETS (MSDS)

A MSDS containing the information required by the Hazard Communication Standard will be kept for each substance listed on Northland Pioneer College's Hazardous Chemicals Inventory List. The MSDS will be the most current one supplied by the chemical manufacturer, importer, or distributor.

The Material Safety Data Sheets will be readily accessible and visible to employees.The location of the master file of all MSDSs and the locations of Departmental MSDSs are listed in Appendix A.

Each dean or director is responsible for obtaining an MSDS for any new chemical that is not on the Northland Pioneer College Hazardous Chemicals Inventory List and/or for which Northland Pioneer College does not have an MSDS.

Within 2 weeks of receipt of the chemical, the dean or director will assure contact with the supplier requesting an MSDS be sent. A sample letter is attached as Appendix B.

The department will forward a copy of the MSDS to the Hazard Communication Coordinator for inclusion on the Hazardous Chemicals Inventory List and placement in the master MSDS files.

Terms that are often referred to on an MSDS are found on Appendix C.

An explanation of how to read an MSDS is found in Appendix D.

6. LABELING

No hazardous chemicals will be accepted for use at Northland Pioneer College, or shipped to any outside location, unless labeled with at least the following information:

- Identity of the hazardous chemical(s).
- Appropriate hazard warnings (physical and/or health hazards).
- Name & address of the chemical manufacturer, importer, or other responsible party.

All in-house containers of hazardous chemicals will be labeled with at least the following information:

- Identity of the hazardous chemical(s) (trade & common name).
- Appropriate hazard warnings (physical and/or health hazards).

No label is to be defaced or removed when a material is received or in use. If a label becomes unreadable or material is poured into a different container, the person using the material is responsible for labeling the container, with an in-house warning label. If the warning labels are not available in the work area, they may be obtained by calling the Hazard Communication Coordinator.

7. EMPLOYEE INFORMATION AND TRAINING

Prior to initial task assignment, all employees at Northland Pioneer College, including temporary employees, working with or potentially exposed to hazardous chemicals, will be appropriately informed and trained concerning the potential hazards to which they may be exposed.

All employees at Northland Pioneer College will be informed of the details of the Hazard Communication Program, including an explanation of the labeling system and the MSDSs, and how employees can use the appropriate hazard information. The Hazard Communication Coordinator is responsible for the overall coordination of the training program in con junction with Human Resources.

Employees will be provided with training when new hazardous chemicals are introduced and added to the chemical inventory, and before non-routine tasks are to be performed that could involve exposure to hazardous chemicals.

The extent of information transmitted to employees during training sessions will be dictated by the degree of hazard presented by the chemicals. The basic elements of the training program will include:

- Type and location of hazardous chemicals used within our facilities.
- Methods of detecting the presence or release of hazardous chemicals.
- Personal protective equipment and methods of protecting against chemical exposure.

- An explanation of an MSDS.
- The text of the OSHA Hazard Communication Standard (29 CFR 1910.1200).
- This written Program, including the Hazardous Chemicals Inventory List, procedures for chemical labeling, handling non-routine tasks, and the contractor policy.

Reinforcement of training will be conducted through topics at safety meetings, as appropriate. Training will be recorded on an appropriate training record and those training records will be maintained by the Hazard Communication Coordinator. The location of the training records is listed in Appendix A. A copy may also be maintained within the Department.

8. NON-ROUTINE WORK

Occasionally employees will be asked to perform non-routine work, which can be defined as work not normally performed by an employee during the normal course of job duties. Examples of non-routine work could be, but are not limited to:

- Confined space entry work.
- Start-up and phase-in of new equipment.
- Using chemical substances in a manner different from normal and customary usage.

The following procedures will be used when employees perform non-routine work:

- The appropriate supervisor will determine the need for non-routine work and the hazard associated with the work.
- Prior to performing a hazardous non-routine task, a special training session will be conducted, usually between the supervisor and the employee.

In addition to the general employee information and training provided, the training will include thoroughly reading the MSDS, reviewing any necessary personal protective equipment, and emphasizing any other precautions that may be needed to reduce or avoid exposure. Special Northland Pioneer College Hazard Communication Program work permits may be required for some non-routine work, such as confined space entry.

Employees share in the responsibility by ensuring their immediate supervisor knows that non-routine work will be performed. Employees should contact their immediate supervisor with questions concerning non-routine work.

9. CONTRACTOR POLICY

Any hazardous substance brought to Northland Pioneer College by an outside contractor must be coordinated with the Hazard Communication Coordinator. The

contractor and Northland Pioneer College's Hazard Communication Coordinator shall supply one another with a list of the hazardous chemicals and the corresponding MSDSs for the materials to which all employees will be potentially exposed in the course of their work.

Outside contractors must be provided with all necessary information concerning the potential hazards of the substances to which they may be exposed and appropriate protective measures required to minimize their exposure by their primary employer.

Appendix A: College Specific Information

Hazard Communication Coordinator	**Vice President for Administrative Services**
Location of Hazard Communication Program	• **District Office in the office of the Vice President for Administrative Services** • **Little Colorado Campus office** • **Painted Desert Campus office** • **Silver Creek Campus office** • **White Mountain Campus office** • **Heber Center office** • **Hopi Center office** • **Kayenta Center office** • **Springerville/Eagar Center office** • **St. Johns Center office** • **Whiteriver Center office**
Location of Material Safety Data Sheet Master File	• **District Office – office of the Vice President for Administrative Services**
Locations of Departmental Material Safety Data Sheets	• **District Office – Director for Facilities and Vehicles; Printing and Duplicating; Vehicle Maintenance** • **Little Colorado Campus – Arts; Blunk; Cosmetology** • **Painted Desert Campus – Photography; Science classroom; Welding** • **Silver Creek Campus – Science classroom**

Locations of Departmental Material Safety Data Sheets (cont'd)	• **White Mountain Campus – Aspen (Arts); Cosmetology; Photography; Ponderosa (Sciences)** • **Hopi Center – Science classroom** • **Springerville/Eagar Center – Science classroom** • **St. Johns Center – Welding** • **Whiteriver Center – Science classroom**
Location of Training Records	• **District Office – office of the Vice President for Administrative Services**
Location of 29 CFR 1910.1200 Standard	• **District Office – office of the Vice President for Administrative Services** • **Little Colorado Campus office** • **Painted Desert Campus office** • **Silver Creek Campus office** • **White Mountain Campus office** • **Heber Center office** • **Hopi Center office** • **Kayenta Center office** • **Springerville/Eagar Center office** • **St. Johns Center office** • **Whiteriver Center office**

Appendix B: Sample MSDS Request

REQUEST FOR A MSDS

Chemical Supplier's Name: _____

Address: _____

City, State Zip Code: _____

Re: Product Material

To Whom It May Concern:

In accordance with the Federal and North Carolina Occupational Safety and Health

Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200), we are requesting that you provide a Material Safety Data Sheet on the following chemical(s) we purchase from your firm.

[List of chemicals]

This request has been documented as required by OSHA. Your response is expected within 30 days of receipt.

Please address your response to:

[Name of Dean or Director]
[Title of Dean or Director]
Northland Pioneer College
P.O. Box 610
Holbrook, Arizona 86025

Your assistance is appreciated.

Sincerely,

[Name of Dean or Director]
[Title of Dean or Director]

Appendix C: MSDS Terms and Definitions

Acute Hazard – symptoms develop immediately or within days after exposure. An acute hazard may be associated with brief and/or high concentrations of exposure.

Asphyxiant – a vapor or gas that can cause unconsciousness or death by suffocation (lack of oxygen). Simple asphyxiants act by displacing the oxygen available in the air so the body cannot take in enough oxygen (i.e. carbon dioxide, nitrogen, helium). Chemical asphyxiants act by interfering with the body's use of oxygen even though adequate oxygen is present (carbon monoxide, cyanide).

Boiling Point (BP) – temperature at which a liquid changes to a gas. Solvents with low boiling points will volatilize readily. Examples include benzene, methyl alcohol, mercury, and toluene.

Carcinogen – a substance that causes cancer or is suspected of causing cancer in humans.

Chemical – any element, chemical compound or mixture of elements and/or compounds.

Chronic Hazard – symptoms or effects develop slowly over a long period of time and with repeated contact.

Combustible – ability of a solid, liquid, or gas to ignite and burn. Chemicals with a flash point 1,000 Fahrenheit or above are considered combustible.

Corrosive – a chemical that attacks and destroys whatever it comes in contact with and can cause permanent damage or destroy living tissue. Vapors from corrosives can damage nose, mouth, and throat.

Evaporation Rate – how long a liquid takes to change into a vapor (evaporate). Butyl acetate has a relative evaporation rate of 1. A chemical with a higher number evaporates faster; one with a lower number evaporates slower.

Exposure or Exposed – an employee is subjected in the course of employment to a chemical that is a physical or heath hazard, and includes potential (e.g. accidental or possible) exposure. "Subjected" in terms of health hazards includes any route of entry (e.g. inhalation, ingestion, skin contact, or absorption).

Flammability – ability of a solid, liquid, or gas to ignite and produce a flame. If a chemical has a flash point below 1,000 degrees Fahrenheit, it is considered a flammable.

Flash Point – the lowest temperature at which a chemical's vapors are concentrated enough to ignite. A lower flash point indicates a more dangerous material, for example, gasoline's flash point is -45EF; diesel fuel #2 has a flash point of +125EF.

Hazardous Chemical - any chemical that is a physical hazard or a health hazard.

Hazard Warning - means any words, pictures, symbols, or combination thereof appearing on a label or other appropriate form of warning, which convey the specific physical and health hazard(s), including target organ effects, of the chemical(s) in the container(s).

Health Hazard - includes chemicals, which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, and neurotoxins, agents that damage the lungs, skin, eyes, or mucous membranes.

Identity - means any chemical or common name, which is indicated on the MSDS for the chemical. The identity used shall permit cross-references to be made among the Hazardous Chemical Inventory List, the label, and the MSDS.

Irritant - a chemical that causes temporary inflammation (redness, swelling, irritation).

Label - means any written, printed, or graphic material displayed on or affixed to containers of hazardous chemicals.

Material Safety Data Sheet (MSDS) - means written or printed material concerning a hazardous chemical, which is prepared in accordance with 29 CFR 1910.1200(g).

Melting Point – the temperature at which a solid changes to a liquid.

pH – the scale used to express the degree of acidity or alkalinity of a solution. A pH of 7 is neutral. Numbers increasing from 8 to 14 indicate greater alkalinity (bases/alkalis). Numbers decreasing from 6 to 0 indicate greater acidity (acids).

Physical Hazard - means a chemical which is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive) or water-reactive.

Sensitizer - a material that causes little or no reaction at first, but which can cause an "allergic" reaction on repeated exposure. Skin sensitization is the most common form, but respiratory sensitization is also known to occur from isocyanates and epoxy resins.

Specific Gravity - density (or heaviness) of a chemical compared to water, which has a relative value of 1. Insoluble materials with specific gravity of less than 1.0 will float in or on water. Insoluble materials with specific gravity greater than 1.0 will sink in water. Most (but not all) flammable liquids have specific gravity less than 1.0 and, if not soluble, will float on water (an important consideration for fire suppression).

Vapor Density - density (or heaviness) of a vapor compared to air, which has the density of 1. If the chemical's vapor density is higher than 1, the vapor is heavier than air and will concentrate in low places such as, along or under floors, in sumps, sewers, manholes, in trenches and ditches. Examples of high density chemicals include propane, hydrogen sulfide, ethane, butane, chlorine, sulfur dioxide. If the chemical's vapor density is less than 1, the vapor will rise in the air and dissipate (unless confined). Examples of low density chemicals include acetylene, methane, and hydrogen.

Vapor Pressure - measures the volatility (how quickly a substance forms a vapor at ordinary temperatures) of a liquid, that is, how easily a liquid evaporates. The higher the number, the faster the liquid evaporates.

Upper and Lower Flammable Limits (UFL & LFL) - The highest and lowest concentrations (% of substance in air) that will produce a flash of fire when an ignition source (heat, arc, or flame) is present., The substance is likely to ignite when the concentration is between the UFL and LFL. Above the UFL, the mixture is too "rich" to burn. Below the LFL, the mixture is too "lean" to burn. The UEL & LEL (upper and lower explosive limits) provide the minimum and maximum concentration of the chemical's vapor in the air required for an explosion to occur.

Appendix D: How to read an MSDS

MSDS Example

Section 1
Product and company identification

MSDS contents (sample)	Explanation
Product name Acme Termiticide Concentrate	Product's brand name.
Manufacturer Acme Agrosciences P.O. Box 12345 9330 Chemical Way Indianapolis, IN	Company's identification and where to obtain information.
Telephone number for information 800-123-4567	Non-emergency information regarding the product.
CHEMTREC 800-424-9300	CHEMical TRansportation Emergency Center phone number for transportation emergencies.
EPA registration number 264-945	EPA assigns each registered product its own identity number.
Date prepared Oct. 15, 1999	Date on which the MSDS was prepared.
Code number 000897	Identification number assigned by the manufacturer.
Chemical family Pyrethroid pesticide	One of the classifications of pesticides.
MSDS number S000-10000	Specific product identification assigned by the manufacturer.

Section 2
Composition/information on ingredients

MSDS contents (sample)	Explanation
Chemical ingredients **Active ingredient** propachlor, 2,3-diethyl -- 20 percent **Inert ingredient** attapulgite -- 80 percent	The active ingredient controls the pest. Inert ingredients can help make the product safer and easier to handle. Both the active and inert ingredients must be listed if they are known to contribute to the product's hazard potential unless they are a trade secret.
CAS Reg. No propachlor 1919-16-7 attapulgite 8031-13-3	Active and inert ingredients are also identified by their Chemical Abstract Service (CAS) number.

Section 3
Hazards identification

MSDS contents (sample)	Explanation
Emergency overview brown liquid, aromatic odor. Causes substantial but temporary eye injury. Harmful if absorbed through skin.	This information is intended for emergency response personnel.
Potential health effects Acute eye: causes redness, irritation, tearing. Acute skin: nonirritating. Acute inhalation: may cause respiratory tract irritation. Acute ingestion: may cause loss of coordination, burns to mouth and esophagus.	Acute effects occur immediately upon exposure to the substance through the eyes or skin or by inhalation or ingestion.
Chronic effects This product contains ingredients that are considered to be probable or suspected human carcinogens (Section 11 -- Chronic).	Chronic effects are those due to long-term exposure to the substance.

Section 4
First aid measures

MSDS contents (sample)	Explanation
Eyes Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. Seek immediate medical attention, preferably with an opthalmologist.	What to do if the product gets into the eyes.
Skin exposure In case of contact, wash with plenty of soap and water. Seek medical attention if irritation develops or persists.	What to do if the product gets on the skin.
Inhalation Remove the victim from immediate source of exposure and assure that the victim is breathing. If breathing is difficult, administer oxygen, if available. If victim is not breathing, administer CPR (cardiopulmonary resuscitation). Seek medical attention.	What to do if the product is breathed into the lungs.
Ingestion If victim is conscious and alert, give 2 to 3 glasses of water to drink and do not induce vomiting. Seek immediate medical attention.	What to do if the product is swallowed.
Notes to physician All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred. Treat symptomatically. No specific antidote available. This material is an acid. The primary toxicity of this product is due to it irritant effects on mucous membranes.	Specific instructions to the physician. Users should be familiar with where this is found on the MSDS so that in an emergency, the information can be given to the physician quickly. Any treatment listed in this section should not be attempted by a nonmedical person.

Section 5
Fire fighting measures

MSDS contents (sample)	Explanation
Flash point 63 degrees Celsius (145 degrees Fahrenheit)	The minimum temperature at which a liquid gives off vapor in sufficient concentration to ignite near the surface of the liquid or in the test vessel used.
Lower explosive limit 2.6 percent **Upper explosive limit** 12.6 percent	The upper and lower explosive limits are concentrations in air that will produce a flash of fire when an ignition source is present.
Extinguishing media Recommended: foam, water, carbon dioxide, dry chemical.	Specific instructions to firefighters on how to extinguish a fire involving the chemical.
Personal protective equipment Wear self-contained breathing apparatus (pressure-demand MSHA/NIOSH approved or equivalent) and full protective gear.	Description of safety equipment that firefighters should use in case of fire involving the chemical.
Special procedures Contain runoff. Remain upwind. Avoid breathing smoke. Use water spray to cool containers exposed to fire.	Safety instructions to emergency personnel responding to the fire.
Unusual fire and explosion hazards Product will burn under fire conditions.	Additional safety information for emergency personnel.
Hazardous decomposition materials (under fire conditions) hydrogen chloride, oxides of carbon.	By-products formed due to fire that may pose a risk to emergency personnel and the environment.

Section 6
Accidental release measures

MSDS contents (sample)	Explanation
Evacuation procedures and safety Wear appropriate protective gear for the situation. See personal protection information in Section 8.	Actions to take when dealing with a spill.
Containment of spill Stop leak if it can be done without risk. Dike spill using absorbent or impervious materials such as earth, sand or clay.	
Cleanup and disposal of spill Absorb with vermiculite or other inert absorbent. Shovel up into an appropriate closed container (Section 7: Handling and Storage). Decontaminate tools and equipment following cleanup.	
Environmental and regulatory reporting If spilled on the ground, the affected area should be removed to a depth of 1 to 2 inches and placed in an appropriate container for disposal. Prevent material from entering public sewer system or any waterways. Spills may be reported to the National Response Center (800-424-8802) and to state and/or local agencies.	

Section 7
Handling and Storage

MSDS contents (sample)	Explanation
Minimum/maximum storage temperatures 0 to 50 degrees Celsius (32 to 122 degrees Fahrenheit)	Temperature range for storing the product in order to prevent chemical separation, inactivation, crystallization, coagulation or other breakdown.

Section 7 (cont'd)
Handling and Storage

MSDS contents (sample)	Explanation
Handling Do not breathe vapors and mists. Do not get on skin or in eyes. Do not ingest. Use handling, storage and disposal procedures that will prevent contamination of water, food or feed. Avoid freezing. If freezing occurs, thaw and remix before using.	Procedures to minimize the risks of accidental exposure or release of the product.
Storage Store in an area that is away from ignition sources.	Procedures that minimize potential storage hazards.

Section 8
Exposure controls/personal protection

MSDS contents (sample)	Explanation
Ingestion Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Always wash thoroughly after handling.	Protective measures to reduce the likelihood of swallowing.
Eye contact To avoid eye contact, wear safety glasses with side shields or chemical goggles.	Protective measures to reduce the likelihood of the pesticide getting in the eyes.
Skin contact To avoid skin contact, wear rubber gloves, rubber boots, long-sleeved shirt, long pants and a head covering.	Protective measures to reduce the possibility of getting the pesticide on the skin.

Section 8 (cont'd)
Exposure controls/personal protection

MSDS contents (sample)	Explanation
Respiratory protection To avoid breathing dust, use a particulate filter, NIOSH-approved per 42 CFR Part 84. Select N or R or P type as appropriate for the oil characteristics of any other air contaminants present. Filter efficiency may range from 95 percent to 99.7 percent as appropriate for the size distribution of dusts present.	The type\ of respirator, if any, needed when handling this product.
Engineering controls If needed, use local exhaust to keep exposures to a minimum.	Procedures used to maintain airborne levels below TLV (Threshold Limit Value) or PEL (Permissible Exposure Limit).
Exposure guidelines Benomyl: PEL (OSHA): 15 milligrams per cubic meter, total dust, 8 hours. TLV (ACGIH): 0.84 ppm, 10 milligrams per cubic meter, 8 hours.	PEL and TLV identify the concentration of chemical in the air, below which workers would not be expected to experience health problems during a 40-hour work week.

Section 9
Physical and chemical properties

MSDS contents (sample)	Explanation
Color Yellow liquid.	Describes the physical appearance of the chemical.
Odor characteristic Kerosene odor.	Describes the product odor for detection purposes.
pH 4.1 Aqueous solution.	pH values from 0 to 2 and from 12 to 14 are usually corrosive to skin and eyes. Also may be helpful in neutralizing a chemical spill.

Section 9 (cont'd)
Physical and chemical properties

MSDS contents (sample)	Explanation
Specific gravity (Water = 1) 0.95	The weight of the chemical compared to the weight of an equal volume of water.
Vapor density (Air = 1) 4.8	Weight of the chemical's vapor compared to air. Vapors with weight values less than 1, rise. Those with weight values greater than 1, sink and concentrate.
Vapor pressure 3 mm Hg @ 25 degrees Celsius (77 degrees Fahrenheit)	Measurement of the potential of the chemical to convert to a gaseous form.
Boiling point 176 degrees Celsius (349 degrees Fahrenheit)	Temperature at which a liquid becomes a vapor.
Solubility in water 0.1 ppm	A measurement of the amount of material that will dissolve in water. Materials with a value of 100 ppm and less are considered to be relatively insoluble, while those with values greater than 1,000 ppm are considered very soluble.

Section 10
Stability and reactivity

MSDS contents (sample)	Explanation
Chemical stability Stable at normal temperatures and storage conditions.	Usually general terms to describe the chemical's stability. At times, temperatures will be listed at which the chemical becomes unstable.
Hazardous polymerization Will not occur.	States if the product will react dangerously with itself to form other products.

Section 10 (cont'd)
Stability and reactivity

MSDS contents (sample)	Explanation
Conditions to avoid Avoid freezing temperatures.	Describes conditions under which the product may damage the product, the container or cause a hazardous condition.
Chemical incompatibility Oxidizing agents.	Describes other materials which may react with the product.
Hazardous decomposition products HCl, HF, NO 3 during combustion.	A list of by-products that are formed when the product burns or is subjected to other conditions.

Section 11
Toxicological information

MSDS contents (sample)	Explanation
Acute Data	
Eye irritation Rabbit: substantial irritation.	Consequences of short-term exposure to eyes.
Skin irritation Rabbit: severe irritation	Consequences of short-term exposure to skin.
Oral LD_{50} Rat: 3600 milligrams per kilogram	Toxicity of short-term exposure from ingestion. The LD_{50} is the dose level that is expected to cause the death of 50 percent of the test animals.
Dermal LD_{50} Rabbit: >5000 milligrams per kilogram	Toxicity by absorption through the skin.

Section 11 (cont'd)
Toxicological information

MSDS contents (sample)	Explanation
Acute Data	
Inhalation LC_{50} Rabbit: 11 milligrams per liter for 4 hours	Toxicity from breathing dusts, fumes or vapors. The LC_{50} is the concentration of dust, fume or mist that is expected to kill 50 percent of the test animals.
Skin sensitization Guinea pig: sensitizing	An allergic reaction on tissue after repeated exposure.
Chronic Data	
Chronic toxicity studies Liver (alteration and enlargement) and thyroid effects (hormone imbalances) at high dose levels (rats); decreased body weight gains.	Adverse health effects resulting from long-term exposure to a chemical, or long-term effects from short exposures.
Mutagenicity data This product does not pose a mutagenic hazard.	Effects of exposure to a substance that may change the genetic material in a living cell.
Reproductive/teratology data No birth defects were noted in rats and rabbits given dithiopyr technical orally during pregnancy. No effects were seen on the ability of male or female rats to reproduce when fed dithiopyr technical for two successive generations.	Effects of exposure that may affect the ability to reproduce viable offspring or cause birth defects.
Carcinogenicity data Benign thyroid tumors (species-specific). The U.S. EPA lists prodiamine as a possible human carcinogen based on limited evidence from animal studies.	The ability of a substance to cause cancer.

Section 12
Ecological information

MSDS contents (sample)	Explanation
Eco-acute toxicity • Bluegill sunfish, 96-hour LC_{50} : 0.47 milligrams per liter • Rainbow trout, 96-hour LC_{50} : 0.46 milligrams per liter • Daphnia magna, 48-hour LC_{50} : 5.2 milligrams per liter • Bobwhite quail, 5-day dietary LC_{50} : >5620 ppm • Mallard duck, 5-day dietary LC_{50} : >5620 ppm • Bobwhite quail, Acute oral LC_{50} : >2250 milligrams per kilogram • Honeybee, LD_{50} : 81 grams per bee	This section describes indicator species that were used in toxicity testing.
Environmental fate Photolysis: Unstable, half-life less than 1 hour. Hydrolysis: Stable soil half-life: 2 months.	The breakdown processes of a chemical when exposed to various environmental elements. Photolysis: Exposure to sunlight. Hydrolysis: Exposure to water.

Section 13
Disposal considerations

MSDS contents (sample)	Explanation
Procedures For disposal, incinerate this material at a facility that complies with local, state and federal regulations.	Directions and limitations for disposal of the material.

Section 14
Transportation information

MSDS contents (sample)	Explanation
Proper shipping name Triazine pesticide, liquid, toxic (cyanazine).	The official shipping name and description that should appear on U.S. Department of Transportation (DOT) shipping papers.
Hazard class Class 9.	DOT recognizes 9 classes of hazardous materials. Typically, the lower the number, the more hazardous the material.
UN number UN 3082	The number assigned for identification by the United Nations (UN) convention.
Special information Marine pollutant.	Special provisions for a particular hazardous material.
Packing group III.	Specifies one or more packing groups for the material based on the hazard of great (I), medium (II), or minor (III) significance. May assist in selecting the proper packaging materials and labels.

Section 15
Regulatory information

MSDS contents (sample)	Explanation
Workplace classification This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).	The Occupational Safety and Health Administration's interpretation of the product's hazard to workers.
SARA Title 3 Section 311/312 Categorizations (40 CFR 372): This product is a hazardous chemical under 29 CFR 1910.1200, and is categorized as an immediate and delayed health, and flammability physical hazard.	Superfund Amendment and Reauthorization Act (SARA) category. SARA requires reporting any spill of any hazardous substance.
TSCA status Exempt from TSCA.	Toxic Substances Control Act statement regarding its regulation. This law covers the production and distribution of com-mercial and industrial chemicals in the United States.
RCRA classification Reactive	Resource Conservation and Recovery Act's classification. RCRA regulates hazardous waste generators and transporters.
CERCLA reportable quantity This material contains no hazardous or extremely hazardous substances as defined by CERCLA.	Comprehensive Environmental Response, Compensation and Liability Act's classification. CERCLA provides EPA authority to respond to releases of hazardous substances.

Section 16
Other information

MSDS contents (sample)	Explanation
National Fire Protection Association (NFPA) ratings Health = 2; Flammability = 1; Reactivity = 0.	NFPA's scale: 0 = least; 1 = slight; 2 = moderate; 3 = high; 4 = extreme. Classification and properties of hazardous chemical data.
Issue date 1/2/92	Original MSDS publishing date.
Revised date 2/8/99	Date that MSDS was amended.
Supersedes 2/3/99	Date of previous MSDS.
Responsibility for MSDS Acme Agrosciences	Responsible party's name.
Address P.O. Box 12345 9330 Chemical Way Indianapolis, IN	Responsible party's address.
Telephone 800-555-1234	Responsible party's non-emergency telephone.