Material Safety Data Sheets

The Mystery of Lyle and Louise

Forensic Fire Debris Analysis

This document contains material safety data sheets for the following kit items:

- **Gasoline Spiked Carpet: Reference Sample**
- **Diesel Fuel Spiked Carpet: Reference Sample**

Material Safety Data Sheet

Vandalia Science Education · 1111 Veterans Memorial Blvd · Huntington, WV 25701

Phone: 304-529-0803 · Fax 888-550-8220

Section 1 - Chemical Product and Company Identification

Name: Gasoline, All Grades

Common Synonyms: Conventional (Oxygenated and Non-oxygenated) Gasoline; Reformulated Gasoline (RFG); Reformulated Gasoline Blendstock for Oxygenate Blending (RBOB); Unleaded Motor or Automotive Gasoline
Molecular Weight: Not applicable to mixtures.

Chemical Formula: Not applicable to mixtures.

Chemtrec Phone: 800-424-9300

National Response Center 800-424-8802

Product Use: Sample for Analysis

Prepared by Jared Vititoe (July 2011)

Section 2 - Composition / Information on Ingredients

Ingredient	CAS No.	Percent
Gasoline	(86290-81-5)	100
Benzene	(71-43-2)	0.1 - 4.9 (0.1-1.3 Reformulated Gasoline)
n-Butane	(106-97-8)	<10
Ethanol	(64-17-5)	0-10
Ethyl benzene	(100-41-4)	<3
n-Hexane	(110-54-3)	0.5-4
Methyl-tertiary butyl ether (MTBE)	(1634-04-4)	0-15.0
Tertiary-amyl methyl ether (TAME)	(994-05-8)	0-17.2
Toluene	(108-88-3)	1-25
1,2,4-Trimethylbenzene	(95-63-6)	<6
Xylene, mixed isomers	(1330-20-7)	1-15

Section 3 - Hazard Identification

Emergency Overview

WARNING! FLAMMABLE LIQUID AND VAPOR. HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN AND EYES. AFFECTS THE CENTRAL NERVOUS SYSTEM. BURNING IN AN AREA WITHOUT ADEQUATE VENTILATION MAY RESULT IN HAZARDOUS TO TOXIC LEVELS OF COMBUSTION PRODUCTS AND/OR INADEQUATE LEVELS OF OXYGEN, WHICH MAY CAUSE UNCONSCIOUSNESS, SUFFOCATION, AND DEATH.

Inhalation: Excessive exposure may cause irritation to respiratory system, including throat, nose, lungs, and respiratory tract. Inhalation of high vapor concentrations may cause Central Nervous System depression which may result in dizziness, light-headedness, nausea, headache, loss of balance and coordination, unconsciousness, coma, respiratory failure and death.

Ingestion: May result in chemical pneumonia, lung damage, respiratory failure, and death from aspiration. Ingestion may result in gastrointestinal disturbances, nausea, vomiting, diarrhea, tremors, loss of consciousness, coma, respiratory arrest, and death.

Skin Contact: May cause irritation, such as dryness and cracking, with repeated and/or prolonged exposure. Acute exposure virtually non-toxic, however may be absorbed in toxic amounts through repeated exposures of large areas.

Eye Contact: Liquid or vapor may cause moderate irritation.

Chronic Exposure: Contains benzene, a regulated carcinogen with the potential to cause anemia and other blood diseases (including leukemia) from repeated, prolonged exposure. Associated in animal studies with systemic toxicity.

Aggravation of Pre-existing Conditions: Exposure may irritate open wounds, skin disorders, dermatitis, chronic respiratory disease, liver or kidney dysfunction, or pre-existing central nervous system disorders.

Section 4 - First Aid Measures

Inhalation: Remove to fresh air. If not breathing, provide artificial respiration. If breathing difficulty is experienced, provide oxygen. Immediately seek medical attention.

Ingestion: DO NOT INDUCE VOMITING. DO NOT GIVE LIQUIDS. Obtain immediate medical attention. If spontaneous vomiting occurs, lean victim forward to reduce risk of aspiration.

Skin Contact: Remove contaminated clothing and shoes. Immediately flush affected skin with large amounts of water for a minimum of 15 minutes and then wash with soap and water. Obtain immediate medical attention if irritation, blisters, or redness develop.

Eye Contact: Immediately flush eyes with copious quantities of water for at least 15 minutes, holding open eyelids

to ensure adequate flushing. Seek immediate medical attention if persistent irritation occurs.

Section 5 - Fire-Fighting Measures

Flash point: -43°C(-45°F)
Auto Ignition temperature: Variable; >280°C(>530°F)
Explosion/Flammability Limits in Air: 1.4-7.6% (V)

Flammable Liquid and Vapor!

Explosion: Vapors may ignite when exposed to ignition source and may explode within confined spaces. Hazardous combustion products may include: May float and be ignited on top of surface water. Flammable vapors may be present below the flash point temperature.

Fire Extinguishing Media: Foam, water spray, or fog. Small fires may be extinguished by fire extinguishers suitable for Class B fires, dry chemical powder, sand, earth, carbon dioxide, water spray, fire fighting foam, or Halon.

Special Information: Do not use water in a jet. Wear full protective clothing and self-contained breathing apparatus.

Section 6 - Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. If possible, remain uphill and upwind from spill. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

Section 7 - Handling and Storage

Handle as a combustible liquid: keep away from heat, sparks, and open flame. Protect against physical damage. During transfer containers should be bonded and grounded to reduce the possibility of static-initiated fire or explosion. Possibility of static charge accumulation increases in cold temperature, low humidity conditions. Store in approved, vented containers in a cool, dry, well-ventilated location, away from any area where the fire hazard may be acute. Separate from incompatibles. Store and handle only in non-smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product. Do Not attempt to clean empty containers since residue is difficult to remove. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, sparks, flame, static electricity or other sources of ignition: they may explode and cause injury or death.

Section 8 - Exposure Controls / Personal Protection

Exposure Limits

		TWA(ppm)	STEL(ppm)
Gasoline (86290-81-5)	ACGIH	300	500
Benzene (71-43-2)	OSHA	1	5
	ACGIH	0.5	2.5
	USCG	1	5
n-Butane (106-97-8)	ACGIH	800	
Ethyl Alcohol (ethanol) (64-17-5)	OSHA	1000	
	ACGIH	1000	
Ethyl benzene (100-41-4)	OSHA	100	
	ACGIH	100	125
n-Hexane (110-54-3)	OSHA	500	
	ACGIH	50	
Methyl-tertiary butyl ether [MTBE] (1634-04-4)	ACGIH	50	
Tertiary-amyl methyl ether [TAME] (994-05-8)			
Toluene (108-88-3)	OSHA	200	
	ACGIH	50	
1,2,4- Trimethylbenzene (95-63-6)	ACGIH	25	
Xylene, mixed isomers (1330-20-7)	OSHA	100	
	ACGIH	100	150

Ventilation System: A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved): If the exposure is limited, wear a supplied air, full-face piece respirator, air lined hood, or full-face piece self-contained breathing apparatus. An air-purifying respirator with organic vapor cartridges or canister should be used under circumstances where airborne concentrations are or are expected to exceed normal exposure limits for odor and/or irritation.

Skin Protection: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection: Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Section 9 - Physical and Chemical Properties

Appearance: Translucent, straw-yellow liquid
Odor: Strong, characteristic odor.
Solubility: Non-Oxygenated Gasoline-Negligible/Gasoline with 15% MTBE-Slight
Specific Gravity: 0.70-0.78 at 16°C (60°F)
Volatiles: 100%
Boiling Point: 39-200°C (85-437°F)
Vapor Density (Air=1): 3-4
Vapor Pressure: 6.4 - 15 RVP at 38°C(100°F)/275-475 mm Hg at 20°C(68°F)
Evaporation Rate (n-butylacetate=1): 10-11

Section 10 - Stability and Reactivity

Stability: Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products: Carbon dioxide, carbon monoxide, and non-combusted hydrocarbons (smoke)

Hazardous Polymerization: Will not occur.

Incompatibilities: Strong oxidizing agents; Nitric and sulfuric acids will form nitrocresols which may violently decompose

Conditions to Avoid: Heat, flames, ignition sources and incompatibles.

Section 11- Toxicological Information

Toxicological Data

Acute Dermal LD50 (Rabbits): >5ml/kg

Acute Oral LD50 (Rats): 18.75ml/kg

Primary Dermal Irritation: Slightly Irritating (Rabbits)

Draize Eye Irritation: Non-Irritating (Rabbits)

Guinea Pig Sensitization: Negative

Possible carcinogen.

Section 12 - Ecological Information

Keep out of sewers, drainage areas, and waterways. Report spills and releases, as applicable, under

Federal and State regulations. Oxygenates such as ethers and alcohols will be expected to exhibit fairly high mobility in soil, and therefore may leach into groundwater.

Section 13 - Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

Section 14 - Transport Information

Domestic (Land, D.O.T.), International (Water, I.M.O., Air, I.C.A.O.)

Proper Shipping Name: Gasoline
Hazard Class: 3
UN/NA: UN1203
Packing Group: II

Section 15 - Regulatory Information

U.S. FEDERAL, STATE, and LOCAL REGULATORY INFORMATION

Product and its constituents are present on the EPA TSCA Inventory. Any spill or uncontrolled

release of this product, including any substantial threat of release, may be subject to federal, state and/or

local reporting requirements. This product and/or its constituents may also be subject to other regulations

at the state and/or local level. Consult those regulations applicable to your facility/operation.

CLEAN WATER ACT (OIL SPILLS)

Any spill or release of this product to "navigable waters" (surface water, including wetlands) or adjoining shorelines sufficient to cause a visible sheen or deposit of a sludge or emulsion must be reported immediately to the National Response Center (1-800-424-8802) as required by U.S. Federal Law. Also contact appropriate state and local regulatory agencies as required.

SARA SECTION 311/312 - HAZARD CLASSES

Acute Health, Chronic Health, and Fire

SARA SECTION 313 - SUPPLIER NOTIFICATION

This product contains the following toxic chemicals which are subject to supplier notification requirements.

	Concentration (Wt. Percent)
Benzene (71-43-2)	0.1-4.9 (0.1-1.3 for Reformulated Gasoline)
Ethyl benzene (100-41-4)	<3
n-Hexane (110-54-3)	0.5-4
Methyl-tertiary butyl ether (MTBE) (1634-04-4)	0-15.0
Toluene (108-88-3)	1-15
1,2,4- Trimethylbenzene (95-63-6)	<6
Xylene, mixed isomers (1330-20-7)	1-15

May contain the following deminimis levels of toxic chemicals subject to Section 313 reporting:

Polycyclic aromatic compounds (PACs): 17ppm

Benzo (g,h,i) perylene (191-24-2): 2.55ppm

Lead (7439-92-1): 0.079ppm

CALIFORNIA PROPOSITON 65 LIST OF CHEMICALS

This product contains “Diesel Engine Exhaust” which is included on the Proposition 65 "List of Chemicals"

required by the California Safe Drinking Water and Toxic Enforcement Act of 1986

CANADIAN REGULATORY INFORMATION (WHMIS)

Class B, Division 2 (Flammable Liquid), Class D, Division 2A (Very toxic by other means), and Class D, Division 2B (Toxic by other means)

Section 16 - Other Information

NFPA Hazard Rating

Health: 1

Flammability: 3

Reactivity: 0

HMIS Hazard Rating

Health: 1(Chronic)

Flammability: 3

Reactivity: 0

The above information has been developed based upon currently available scientific data. New information may be developed from time to time which may render the conclusions of this report obsolete. Therefore, no warranty is extended as to the applicability of this information to the user's intended purpose or for the consequences of its use or misuse. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Vandalia Science Education, Inc. shall not be held liable for any damage resulting from handling or from contact with the above product.

Material Safety Data Sheet

Vandalia Science Education · 1111 Veterans Memorial Blvd · Huntington, WV 25701

Phone: 304-529-0803 · Fax 888-550-8220

Section 1 - Chemical Product and Company Identification

Name: Diesel Fuel

Common Synonyms: Motor Vehicle Diesel Fuel; Low Sulfur Diesel; Ultra Low Sulfur Diesel; Diesel Fuel #2; Dyed Diesel Fuel; Non-Road, Locomotive and Marine Diesel Fuel; Tax-exempt Diesel Fuel

Molecular Weight: Not applicable to mixtures.
Chemical Formula: Not applicable to mixtures.
Chemtrec Phone: 800-424-9300

National Response Center 800-424-8802

Product Use: Sample for Analysis

Prepared by Jared Vititoe (July 2011)

Section 2 - Composition / Information on Ingredients

Ingredient	CAS No.	Percent
Diesel Fuel*	68476-34-6	100%
Naphthalene	91-20-3	<0.1%

*May contain a multifunctional additive

Section 3 - Hazard Identification

Emergency Overview

WARNING! FLAMMABLE LIQUID AND VAPOR. HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN AND EYES. AFFECTS THE CENTRAL NERVOUS SYSTEM. BURNING IN AN AREA WITHOUT ADEQUATE VENTILATION MAY RESULT IN HAZARDOUS TO TOXIC LEVELS OF COMBUSTION PRODUCTS AND/OR INADEQUATE LEVELS OF OXYGEN, WHICH MAY CAUSE UNCONSCIOUSNESS, SUFFOCATION, AND DEATH.

Inhalation: Excessive exposure may cause irritation to respiratory system, including throat, nose, lungs, and respiratory tract. Inhalation of high vapor concentrations may cause Central Nervous System depression which may result in dizziness, light-headedness, nausea, headache, loss of balance and coordination, unconsciousness, coma, respiratory failure and death.

Ingestion: May result in chemical pneumonia, lung damage, respiratory failure, and death from aspiration. Ingestion may result in gastrointestinal disturbances, nausea, vomiting, diarrhea, tremors, loss of consciousness, coma, respiratory arrest, and death.

Skin Contact: May cause irritation, such as dryness and cracking, with repeated and/or prolonged exposure. Acute exposure virtually non-toxic, however may be absorbed in toxic amounts through repeated exposures of large areas.

Eye Contact: Liquid or vapor may cause mild irritation.

Chronic Exposure: Repeated exposure may result in skin cancer and systemic toxicity.

Aggravation of Pre-existing Conditions: Irritation resulting from exposure may irritate open wounds, skin disorders, and dermatitis.

Environmental Hazards: Toxic to aquatic organisms.

Section 4 - First Aid Measures

Inhalation: Remove to fresh air. If not breathing, provide artificial respiration. If breathing difficulty is experienced, provide oxygen. Immediately seek medical attention.

Ingestion: DO NOT INDUCE VOMITING. DO NOT GIVE LIQUIDS. Obtain immediate medical attention. If spontaneous vomiting occurs, lean victim forward to reduce risk of aspiration.

Skin Contact: Remove contaminated clothing and shoes. Immediately flush affected skin with large amounts of water for a minimum of 15 minutes and then wash with soap and water. Obtain immediate medical attention if irritation, blisters, or redness develop.

Eye Contact: Immediately flush eyes with copious quantities of water for at least 15 minutes, holding open eyelids to ensure adequate flushing. Seek immediate medical attention if persistent irritation occurs.

Section 5 - Fire-Fighting Measures

Flash point: >52°C(126°F)
Auto Ignition temperature: 257°C(494°F)
Explosion/Flammability Limits in Air: 0.5-4.4% (V)

Flammable Liquid and Vapor!

Explosion: Vapors may ignite when exposed to ignition source and may explode within confined spaces. Hazardous combustion products may include: May float and be ignited on top of surface water. Flammable vapors may be present below the flash point temperature.

Fire Extinguishing Media: Foam, water spray, or fog. Small fires may be extinguished by fire extinguishers suitable for Class B fires, dry chemical powder, sand, earth, carbon dioxide, water spray, fire fighting foam, or Halon.

Special Information: Do not use water in a jet. Wear full protective clothing and self-contained breathing apparatus.

Section 6 - Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. If possible, remain uphill and upwind from spill. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

Section 7 - Handling and Storage

Handle as a combustible liquid: keep away from heat, sparks, and open flame. Protect against physical damage. During transfer containers should be bonded and grounded to reduce the possibility of static-initiated fire or explosion. Possibility of static charge accumulation increases in cold temperature, low humidity conditions. Store in approved, vented containers in a cool, dry, well-ventilated location, away from any area where the fire hazard may be acute. Separate from incompatibles. Store and handle only in non-smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product. Do Not attempt to clean empty containers since residue is difficult to remove. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, sparks, flame, static electricity or other sources of ignition: they may explode and cause injury or death.

Section 8 - Exposure Controls / Personal Protection

Exposure Limits

Diesel Fuel: (68476-34-6)

OSHA: 5 mg/m, as mineral oil mist

ACGIH: 100 mg/m3 (as totally hydrocarbon vapor) TWA A3, skin

Naphthalene: (91-20-3)

OSHA: 10 ppm TWA

ACGIH: 10 ppm TWA / 15 ppm STEL A4, Skin

Ventilation System: A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved): If the exposure is limited, wear a supplied air, full-face piece respirator, air lined hood, or full-face piece self-contained breathing apparatus. An air-purifying respirator with organic vapor cartridges or canister should be used under circumstances where airborne concentrations are or are expected to exceed normal exposure limits for odor and/or irritation.

Skin Protection: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection: Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Section 9 - Physical and Chemical Properties

Appearance: Clear, straw-yellow liquid. Dyed liquid will be red.
Odor: Mild odor
Solubility: Negligible
Specific Gravity: 0.83-0.88 at 16°C (60°F)
Volatiles: 100%
Boiling Point: 160-366°C (320-690°F)
Vapor Density (Air=1): >1
Vapor Pressure: 0.009psia at 21°C (70°F)
Evaporation Rate: Slow, condition dependant

Section 10 - Stability and Reactivity

Stability: Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products: Carbon dioxide, carbon monoxide, and non-combusted hydrocarbons (smoke)

Hazardous Polymerization: Will not occur.

Incompatibilities: Strong oxidizing agents

Conditions to Avoid: Heat, flames, ignition sources and incompatibles.

Section 11- Toxicological Information

Toxicological Data

Acute Dermal LD50 (Rabbits): >5ml/kg

Acute Oral LD50 (Rats): 9ml/kg

Primary Dermal Irritation: Extremely Irritating (Rabbits)

Draize Eye Irritation: Non-Irritating (Rabbits)

Guinea Pig Sensitization: Negative

Section 12 - Ecological Information

Keep out of sewers, drainage areas, and waterways. Report spills and releases, as applicable, under

Federal and State regulations. Toxic to aquatic organisms. Floats on water surfaces. Large volumes may penetrate soil and contaminate groundwater. Contains volatile biodegradable constituents that oxidize rapidly by photochemical reactions in air. Constituents may bioaccumulate.

Section 13 - Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

Section 14 - Transport Information

Domestic (Land, D.O.T.), International (Water, I.M.O., Air, I.C.A.O.)

Proper Shipping Name: Diesel Fuel
Hazard Class: 3
UN/NA: UN1993/UN1202
Packing Group: III

Section 15 - Regulatory Information

U.S. FEDERAL, STATE, and LOCAL REGULATORY INFORMATION

Product and its constituents are present on the EPA TSCA Inventory. Any spill or uncontrolled

release of this product, including any substantial threat of release, may be subject to federal, state and/or local reporting requirements. This product and/or its constituents may also be subject to other regulations at the state and/or local level. Consult those regulations applicable to your facility/operation.

CLEAN WATER ACT (OIL SPILLS)

Any spill or release of this product to "navigable waters" (surface water, including wetlands) or adjoining shorelines sufficient to cause a visible sheen or deposit of a sludge or emulsion must be reported immediately to the National Response Center (1-800-424-8802) as required by U.S. Federal Law. Also contact appropriate state and local regulatory agencies as required.

SARA SECTION 311/312 - HAZARD CLASSES

Acute Health, Chronic Health, and Fire

SARA SECTION 313 - SUPPLIER NOTIFICATION

This product may contain listed chemicals below the *de minimis* levels which therefore are not subject to the supplier notification requirements.

CALIFORNIA PROPOSITON 65 LIST OF CHEMICALS

This product contains “Diesel Engine Exhaust” which is included on the Proposition 65 "List of Chemicals" required by the California Safe Drinking Water and Toxic Enforcement Act of 1986

CANADIAN REGULATORY INFORMATION (WHMIS)

Class B, Division 3 (Combustible Liquid) and Class D, Division 2, Subdivision B (Toxic by other means)

Section 16 - Other Information

NFPA Hazard Rating

Health: 0

Flammability: 2

Reactivity: 0

HMIS Hazard Rating

Health: 1(Chronic)

Flammability: 2

Reactivity: 0

The above information has been developed based upon currently available scientific data. New information may be developed from time to time which may render the conclusions of this report obsolete. Therefore, no warranty is extended as to the applicability of this information to the user's intended purpose or for the consequences of its use or misuse. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Vandalia Science Education, Inc. shall not be held liable for any damage resulting from handling or from contact with the above product.