MATERIAL SAFETY DATA SHEET

1. SUBSTANCE AND SOURCE IDENTIFICATION

National Institute of Standards and Technology
Standard Reference Materials Program
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SRM Number: 3086
MSDS Number: 3086
SRM Name: Aroclor 1260 In Methanol

Date of Issue: 23 September 2011

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Description: This Standard Reference Material (SRM) is a solution of Aroclor 1260 (Chemical Abstracts Registry Number 11096-82-5) in methanol. This SRM is intended primarily for calibrating chromatographic instrumentation and methods of analysis used for the determination of Aroclor 1260 and polychlorinated biphenyls (PCBs) in water. A unit of SRM 3086 consists of five 2 mL ampoules, each containing approximately 1.2 mL of solution.

Substance: Methanol Solution.

Other Designations:

Methanol (methyl alcohol; wood alcohol; carbinol; monohydroxymethane; wood spirit; wood naphtha; methylol)

2. HAZARDS IDENTIFICATION

NFPA Ratings (Scale 0–4): Health = 2 Fire = 3 Reactivity = 0

NOTE: The health and safety information included in this MSDS is for methanol, the main component of this SRM. The concentration of Aroclor 1260 in this NIST SRM is below the reportable limits for hazardous components (1 %) and/or carcinogens (0.1 %), as required by OSHA, 29 CFR 1910.1200 (g)(2)(i)(C)(1), for MSDS information.

Physical Hazards: Flammable liquid and vapor. Vapor may cause flash fire.

Major Health Hazards: Skin irritation, eye irritation, central nervous system depression, nerve damage.

Target Organ: Nervous system.

Potential Health Effects

Inhalation:

Acute exposure to methyl alcohol may cause irritation of the mucous membranes, coughing, oppression in the chest, tracheitis, bronchitis, tinnitus, unsteady gait, twitching, colic, constipation, nystagmus, and blepharospasm. Symptoms from occupational exposure include paresthesias, numbness and shooting pains in the hands and forearms. Metabolic acidosis, and effects on the eyes and central nervous system may occur as detailed in acute ingestion. Chronic or prolonged exposure may cause effects as in acute ingestion, reproductive effects have been reported in animals.

Skin Contact:

Contact with methanol may cause irritation. Skin absorption may occur and cause metabolic acidosis and effects on the eyes and central nervous system as detailed in acute ingestion. Repeated or prolonged contact with methanol may cause defatting of the skin resulting in erythema, scaling, and eczematoid dermatitis. Chronic absorption may result in metabolic acidosis and effects as detailed in acute ingestion.

Eye Contact:

Methanol vapors may cause irritation. High concentrations have been reported to cause violent inflammation of the conjunctiva and epithelial defects on the cornea. Mild irritation may occur with dilute solutions. Chronic exposure may cause conjunctivitis.

Ingestion:

Ingesting methanol may cause mild and transient inebriation and subsequent drowsiness followed by an asymptomatic period lasting 8–48 hours. Following the delay, coughing, dyspnea, headache, dullness, weakness, vertigo or dizziness, nausea, vomiting, occasional diarrhea, anorexia, violent pain in the back, abdomen, and extremities, restlessness, apathy or delirium, and rarely, excitement and mania may occur. As little as 15 ml has caused blindness; the usual fatal dose is 60–240 ml. Prolonged asthenia and irreversible effects on the nervous system including difficulty in speech, motor dysfunction with rigidity, spasticity, and hypokinesis have been reported. Repeated ingestion of methanol may cause visual impairment and blindness and other systemic effects as detailed in acute ingestion. Reproductive effects have been reported in animals

Listed as a Carcinogen/Potential Carcinogen

Component: Methanol	**Yes**	**No**
In the National Toxicology Program (NTP) Report on Carcinogens		X
In the International Agency for Research on Cancer (IARC) Monographs		X
By the Occupational Safety and Health Administration (OSHA)		X

3. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

Component	**CAS Number**	**EC Number (EINECS)**	**Nominal Concentration[a] (%)**
Methanol	67-56-1	200-659-6	99.99

[a] The concentration of Aroclor 1260 is below the reportable limits for hazardous components (1 %) and/or carcinogens (0.1 %), as required by OSHA, 29 CFR 1910.1200 (g)(2)(i)(C)(1), for MSDS information. NTP has listed Aroclor 1260 as reasonably anticipated to be a human carcinogen (as PCBs, CAS number 1336-36-3); IARC has listed Aroclor 1260 in Group 2A (probably carcinogenic to humans) related to PCBs.

Component: Methanol

EC Classification: F, T

EC Risk (R No.): R11, R39/23/24/25

EC Safety (S No.): S7, S16, S36/37, S45

EC Risk/Safety Phrases: See Section 15, "Regulatory Information".

4. FIRST AID MEASURES

Inhalation: If adverse effects occur, remove to uncontaminated area. If not breathing, qualified personnel should give artificial respiration. Seek immediate medical attention.

Skin Contact: Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

Eye Contact: Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

Ingestion: If swallowed, get immediate medical attention.

5. FIRE FIGHTING MEASURES

Fire and Explosion Hazards: Severe fire hazard. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back. Vapor/air mixtures are explosive.

Extinguishing Media: Alcohol-resistant foam, carbon dioxide, regular dry chemical, fine water spray.

Fire Fighting: Move container from fire area if it can be done without risk. Do not scatter spilled material with high-pressure water streams. Avoid inhalation of material or combustion by-products. Wear full protective clothing and NIOSH-approved self-contained breathing apparatus (SCBA).

Flash Point (°C): 11

Method: Closed Cup.

Autoignition (°C): 385

Flammability Limits in Air (Volume %)

Upper Explosive Limits (UEL): 6 %
Lower Explosive Limits (LEL): 36 %

6. ACCIDENTAL RELEASE MEASURES

Occupational Release: Avoid heat, flames, sparks and other sources of ignition. Do not touch spilled material. Stop leak if possible without personal risk. Reduce vapors with water spray. Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Remove sources of ignition. Keep unnecessary people away, isolate hazard area and deny entry. Refer to Section 13, "Disposal Considerations".

7. HANDLING AND STORAGE

Storage: Store and handle in accordance with all current regulations and standards. Keep separated from incompatible substances. Store in a well-ventilated area. Subject to storage regulations: U.S. OSHA 29 CFR 1910.106.

Safe Handling Precautions: See Section 8, "Exposure Controls and Personal Protection".

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits:

Component: Methanol

NIOSH (TWA):	200 ppm
NIOSH (IDLH):	6000 ppm
NIOSH (STEL):	250 ppm
ACGIH (TWA):	200 ppm
ACGIH (STEL):	250 ppm
OSHA (TWA):	200 ppm

Ventilation: Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

Respirator: If workplace conditions warrant a respirator, a respiratory protection plan that meets OSHA 29 CFR 1910.134 must be followed. Refer to the "NIOSH Guide to the Selection and Use of Particulate Respirators Certified under 42 CFR 84" for applicable certified respirators.

Eye Protection: Wear safety goggles. An eye wash station and quick drench shower should be readily available near of handling and use areas.

Personal Protection: Wear appropriate chemical resistant gloves. Wear appropriate chemical resistant clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Component: Methanol

Appearance and Odor: Colorless and alcohol odor

Molar Mass: 32.04 g/mol

Chemical Formula: CH_3OH

Water Solubility: Soluble

Specific Gravity (water = 1): 0.7914

Boiling point: 65°C (149°F)

Vapor Pressure: 97.25 mmHg (20°C)

Vapor Density (air = 1): 1.11

10. STABILITY AND REACTIVITY

Stability: X Stable _____ Unstable

Stable at normal temperature and pressure.

Conditions to Avoid: Avoid heat, flames, sparks and other sources of ignition. Minimize contact with material. Avoid inhalation of material or combustion by-products.

Incompatibilities: Halo carbons, combustible materials, metals, oxidizing materials, halogens, metal carbide, bases, acids, amines.

Fire/Explosion Information: Refer to Section 5, "Fire Fighting Measures".

Hazardous Decomposition: Thermal decomposition or combustion produces oxides of carbon, various organic fragments.

Hazardous Polymerization: ____ Will Occur X Will Not Occur

11. TOXICOLOGICAL INFORMATION

Route of Entry: X Inhalation X Skin X Ingestion

Toxicity Data:

Human, Inhalation, LC_{50}: 300 ppm
Human, Oral, TDLo: 143 g/kg

Target organs:

Nervous system. May cause blindness.

Mutagen/Teratogen:

The components of this material have been investigated as possible mutagens and reproductive effectors. The Registry of Toxic Effects of Chemical Substances (RTECS), publishes the following endpoints.

Human Mutagenic: 300 mmol/L

Health Effects (Acute Exposure): See Section 2 "Hazard Identification".

Medical Conditions Generally Aggravated by Exposure: Allergies and eye, kidney, and skin disorders.

12. ECOLOGICAL INFORMATION

Ecotoxicity Data

Aquatic Toxicity - Fish: fathead minnow (*Pimephales promelas*), 28 200 mg/L (LC_{50}/96 hrs/flow-through)
Aquatic Toxicity - Fish: fathead minnow (*Pimephales promelas*), >100 mg/L (LC_{50}/96 hrs/static)

13. DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with all applicable federal, state, and local regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): U154. Keep out of water supplies and sewers.

14. TRANSPORTATION INFORMATION

U.S. DOT and IATA: Methanol; UN1230; Hazard Class 3, Sub Risk 6.1; Excepted Quantity E3.

15. REGULATORY INFORMATION

U.S. REGULATIONS

CERCLA Sections 102a/103 (40 CFR 302.4): Methanol, 5000 lb final RQ; 2270 kg final RQ.
SARA Title III Section 302 (40 CFR 355.30): Not applicable.
SARA Title III Section 304 (40 CFR 355.40): Not applicable.
SARA Title III Section 313 (40 CFR 372.65): Methanol, 1.0 % de minimis concentration.
OSHA Process Safety (29 CFR 1910.119): Not applicable.
SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21)

ACUTE HEALTH:	Yes
CHRONIC HEALTH:	Yes
FIRE:	Yes
REACTIVE:	No
PRESSURE:	No

STATE REGULATIONS

California Proposition 65: Not regulated.

CANADIAN REGULATIONS

WHMIS Information: Not provided for this material.

EUROPEAN REGULATIONS

Component: Methanol

EC Classification (assigned)

T: Toxic

F: Flammable

EC Risk Phrases

R11 - Highly Flammable.

R39/23/24/25 - Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

EC Safety Phrases

S7 - Keep container tightly closed.

S16 - Keep away from sources of ignition – No smoking.

S36/37 - Wear suitable protective clothing and gloves.

S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

NATIONAL INVENTORY STATUS

U.S. Inventory (TSCA): Methanol listed.

TSCA 12(b), Export Notification: Not listed.

16. OTHER INFORMATION

Sources: ChemADVISOR, Inc., MSDS *Methyl Alcohol*, 10 June 2011.

EC; European Chemical Substance Information System (ESIS), *Methyl Alcohol*, CAS No. 67-56-1; available at http://esis.jrc.ec.europa.eu/ (accessed Sep 2011).

RTECS; *Methanol, RTECS No. PC1400000, CAS No. 67-56-1*; CDC, May 2009; available at http://www.cdc.gov/niosh/npg/npgd0397.html (accessed Sep 2011).