

MATERIAL SAFETY DATA SHEET PACKET

**National Institute of Standards and Technology
Standard Reference Materials Program
100 Bureau Drive, Stop 2300
Gaithersburg, Maryland 20899-2300**

**SRM Number: 1866b
SRM Name: Common Commercial
Asbestos**

Date of Issue: 09 January 2007

**MSDS Coordinator: Mario Cellarosi
Telephone: 301-975-6776
FAX: 301-926-4751
E-mail: SRMMSDS@nist.gov**

**Emergency Telephone Chem Trec:
1-800-424-9300 (North America)
+1-703-527-3887 (International)**

Description: Standard Reference Material (SRM) 1866b is comprised of three commercial-grade asbestos materials that were, or are, commonly used in commerce. These asbestos materials are typical of the asbestos found in bulk samples during routine asbestos inspections of building materials. The optical properties serve as a primary calibration standard in the identification of asbestos with polarized light microscopy (PLM). A unit of SRM 1866b consists of a set of three bottles: one bottle containing chrysotile, one bottle containing asbestiform grunerite (amosite), and one bottle containing asbestiform riebeckite (crocidolite). Each bottle contains between 1 gram and 3 grams of material.

Chrysotile

Asbestiform Grunerite (Amosite)

Asbestiform Riebeckite (Crocidolite)

An MSDS is provided for each of the three asbestos materials listed above, which contain hazardous components 1 % or greater and/or carcinogens 0.1 % or greater, in compliance with OSHA 29 CFR 1910.1200.

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: 1866b
MSDS Number: 1866b
SRM Name: Common Commercial Asbestos

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1-800-424-9300 (North America)
+1-703-527-3887 (International)

Description: Standard Reference Material (SRM) 1866b is a set of three individual commercial-grade asbestos materials: **chrysotile**, asbestiform grunerite (amosite), and asbestiform riebeckite (crocidolite). A unit of SRM 1866b consists of three bottles, each containing between 1 gram and 3 grams of individual material.

Substance: Chrysotile

2. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS^(a)

Component: Chrysotile
Other Designations: Chrysotile (metaxite; serpentine chrysotile; asbestos; chrysotile asbestos)
CAS Number: 12001-29-5
EC Number (EINECS): Not assigned.
SRM Nominal Concentration (% by weight or volume): > 90

Component: Magnetite (as an impurity)
Other Designation: Magnetite (magnetic iron oxide; black iron oxide; magnetic iron ore; lodestone; black ferric oxide)
CAS Number: 1309-38-2
EC Number (EINECS): 215-169-8
SRM Nominal Concentration (% by weight): < 5
EC Classification: T
Carcinogen Category 1
EC Risk (R No.): 23, 45, 48
EC Safety (S No.): 45, 53

^(a) Hazardous components 1 % or greater; carcinogens 0.1 % or greater are listed in compliance with OSHA 29 CFR 1910.1200.

3. HAZARDS IDENTIFICATION

NFPA Ratings (Scale 0–4): Health = 1 Fire = 0 Reactivity = 0

Major Health Hazards: Cancer hazard (in humans)

Potential Health Effects

Inhalation:

Inhalation of chrysotile asbestos dust may be irritating. Symptoms include a cough and chest pain. Chronic exposure may cause asbestosis, interstitial fibrosis of the lung tissue, which may develop within 4 years to 9 years, but onset may be typically delayed 20 years to 40 years after first exposure. Death from asbestosis may be due to respiratory or cardiac failure. Secondary lung infections may also occur. Chronic exposure of asbestos to workers may also cause pleural effusion as early as 3 years to 4 years after initial exposure. Chronic exposure of asbestos to workers also increases the chance of pleural and peritoneal mesotheliomas, bronchogenic carcinoma, lung cancer, and cancers of the gastrointestinal tract and larynx. The latent period for mesothelioma is 3 years to 40 years; for lung cancer, 15 years to 30 years.

Skin Contact: Direct contact may cause irritation. Asbestos fibers may penetrate the skin and result in "asbestos corns", due to thickening of the skin around the implanted fiber. These corns usually occur on the hands and forearms, and they disappear on removal of the fibers.

Eye Contact: Direct contact may cause irritation with redness due to mechanical action.

Ingestion: Acute exposure by cause gastrointestinal irritation. Chronic exposure of asbestos fibers may be involved in cancers of the buccal cavity and pharynx, esophagus, stomach, colon, and rectum.

**Listed as a Carcinogen/
Potential Carcinogen:**

Yes	No	
<u>X</u>	_____	In the National Toxicology Program (NTP) Report on Carcinogens.
<u>X</u>	_____	In the International Agency for Research on Cancer (IARC) Monographs.
<u>X</u>	_____	By the Occupational Safety and Health Administration (OSHA).

4. FIRST AID MEASURES

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

Skin Contact: Rinse affected area with copious amounts of water followed by washing with soap and water for at least 15 minutes while removing contaminated clothing. Get immediate medical attention.

Eye Contact: Flush eyes, including under the eyelids, with copious amounts of water for at least 15 minutes. Get immediate medical attention.

Ingestion: If a large amount is swallowed, get immediate medical attention.

5. FIRE FIGHTING MEASURES

Fire and Explosion Hazards: Chrysotile is a negligible fire hazard.

Extinguishing Media: Regular dry chemical. Carbon dioxide. Water. Regular foam.

Fire Fighting: If material is involved in a fire, extinguish fire with a medium appropriate for the surrounding fire. Material itself does NOT burn or burns with difficulty. Keep run-off water out of sewers and water sources. Wear full protective clothing and NIOSH-approved self-contained breathing apparatus (SCBA).

Component: Chrysotile

Flash Point: Not applicable.

Method Used: Not applicable.

Autoignition Temp.: Not applicable.

Flammability Limits in Air

UPPER (Volume %): Not applicable.

LOWER (Volume %): Not applicable.

6. ACCIDENTAL RELEASE MEASURES

Occupational Release: Do NOT touch or walk through spilled material. Avoid inhalation of asbestos dust (see Section 8, "Exposure Controls and Personal Protection"). Collect small dry spills with a shovel and place material into an appropriate container for disposal. Prevent entry into waterways and sewers. Clean up residue with a HEPA filter vacuum.

Disposal: Refer to Section 13, "Disposal Considerations".

7. HANDLING AND STORAGE

Storage: Store and handle in accordance with all current regulations and standards.

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

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits:	Chrysotile OSHA (PEL): 0.1 fibers/cc TWA ACGIH (TLV): 0.1 fibers/cc TWA NIOSH: 0.1 fibers/cc recommended TWA (10 h)
Ventilation:	Provide local exhaust ventilation system equipped with a HEPA-filter dust collection system.
Respirator:	If workplace conditions warrant a respirator's use, a NIOSH/MSHA approved respirator should be used under an implemented respiratory protection program in accordance with OSHA Standard 29 CFR 1910.134 (General Industry, Use of Respirators) and 29 CFR 1910.1001 for occupational exposure to asbestos.
Eye Protection:	Wear safety goggles. An eye wash station should be readily available near areas of use.
Personal Protection:	Wear appropriate protective clothing and gloves to prevent skin exposure. Refer to OSHA Regulated Substances: OSHA 29 CFR 1910.1001.

9. PHYSICAL AND CHEMICAL PROPERTIES

Component:	Chrysotile
Appearance:	Fibrous solid to dust-like powder. White to grey-brown. Odorless.
Relative Molecular Mass:	Not applicable.
Molecular Formula:	$Mg_3(Si_2O_5)(OH)_4$
Water Solubility:	Insoluble.
Solvent Solubility:	Insoluble in organic solvents.

10. STABILITY AND REACTIVITY

Stability:	<input checked="" type="checkbox"/> Stable <input type="checkbox"/> Unstable
	Stable at normal temperatures and pressure.
Conditions to Avoid:	Avoid generating dust. Keep out of water supplies and sewers.
Incompatible Materials:	May be attacked by strong acids.
Fire/Explosion Information:	See Section 5, "Fire Fighting Measures".
Hazardous Decomposition:	Completely decomposes at temperatures of 1 000 °C.
Hazardous Polymerization:	<input type="checkbox"/> Will Occur <input checked="" type="checkbox"/> Will Not Occur

11. TOXICOLOGICAL INFORMATION

Route of Entry:	<input checked="" type="checkbox"/> Inhalation <input checked="" type="checkbox"/> Skin <input checked="" type="checkbox"/> Ingestion
Toxicity Data:	Chrysotile Human, Inhalation TCL ₀ : 2.8 fibers/cc (5 years) Rat, Inhalation-Intermittent TCL ₀ : 8 210 µg/m ³ (6 h to 20 d) Rat, Oral-Continuous TDL ₀ : 10 867 mg/kg (78 weeks)
Tumorigenic, Reproductive, Mutagenic Data:	Chrysotile has been investigated as a tumorigenic and mutagenic effector.
Health Effects (Acute and Chronic):	See Section 3: "Hazards Identification" for potential health effects.

12. ECOLOGICAL INFORMATION

Ecotoxicity Data:	Not available.
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13. DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with all applicable federal, state, and local regulations.

14. TRANSPORTATION INFORMATION

U.S. DOT and IATA: Asbestos; UN2212; Hazard Class 9
NOTE: This material, as packaged for SRM 1866b, is not subject to the regulations per DOT Special Provision 156 and IATA special Provision A61.

15. REGULATORY INFORMATION

U.S. Regulations: CERCLA Sections 102a/103 (40 CFR 302.4): Asbestos: 1 lbs RQ
SARA Title III Section 302 (40 CFR 355.30): Not regulated.
SARA Title III Section 304 (40 CFR 355.40): Not regulated.
SARA Title III Section 313 (40 CFR 372.65): Asbestos.
OSHA Process Safety (29 CFR 1910.119): Not regulated.
SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21):

ACUTE: No.
CHRONIC: Yes.
FIRE: No.
REACTIVE: No.
SUDDEN RELEASE: No.

State Regulations: California Proposition 65: Asbestos is known to the state of California to cause cancer (Feb. 17, 1987).

CANADIAN Regulations

WHMIS Classification: Not determined for this material.

EUROPEAN Regulations

EC Classification (assigned): T Toxic.
Carcinogen Category 1.

EC Risk Phrases: R45 May cause cancer.
R23/48 Toxic: danger of serious damage to health by prolonged exposure through inhalation.

EC Safety Phrases: S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S53 Avoid exposure.

National Inventory Status

U.S. Inventory (TSCA): Asbestos: Not listed on inventory.

**TSCA 12(b)
Export Notification:** Asbestos: CAS No.: 1332-21-4
Section 6

16. OTHER INFORMATION

Sources: MDL Information Systems, Inc., MSDS *Chrysotile*, 15 June 2006.

Disclaimer: Physical and chemical data contained in this MSDS are provided only for use as a guide in assessing the hazardous nature of the material. The MSDS was prepared carefully, using current references; however, NIST does not certify the data in the MSDS. The certified values for this material are given in the NIST Certificate of Analysis.

MATERIAL SAFETY DATA SHEET

1. SUBSTANCE AND SOURCE IDENTIFICATION

National Institute of Standards and Technology
Standard Reference Materials Program
100 Bureau Drive, Stop 2300
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SRM Number: 1866b
MSDS Number: 1866b
SRM Name: Common Commercial Asbestos

Date of Issue: 09 January 2007

MSDS Coordinator: Mario Cellarosi
Telephone: 301-975-6776
FAX: 301-926-4751
E-mail: SRMMSDS@nist.gov

Emergency Telephone ChemTrec:
1-800-424-9300 (North America)
+1-703-527-3887 (International)

Description: Standard Reference Material (SRM) 1866b is a set of three individual commercial-grade asbestos materials: chrysotile, **asbestiform grunerite (amosite)**, and asbestiform riebeckite (crocidolite). A unit of SRM 1866b consists of three bottles, each containing between 1 gram and 3 grams of individual material.

Substance: Asbestiform Grunerite

2. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS^(a)

Component:	Asbestiform Grunerite
Other Designations:	Asbestiform Grunerite (grunerite; amosite; brown asbestos; amosite asbestos)
CAS Number:	12172-73-5
EC Number (EINECS):	Not assigned.
SRM Nominal Concentration (% by weight or volume):	> 90
Component:	Magnetite (as an impurity)
Other Designation:	Magnetite (magnetic iron oxide; black iron oxide; magnetic iron ore; lodestone; black ferric oxide)
CAS Number:	1309-38-2
EC Number (EINECS):	215-169-8
SRM Nominal Concentration (% by weight):	< 5
Component:	Quartz
Other Designation:	Quartz (alpha quartz; silicon dioxide; silica; silicic anhydride; agate)
CAS Number:	14808-60-7
EC Number (EINECS):	238-878-4
SRM Nominal Concentration (% by weight):	< 5
EC Classification:	T Carcinogen Category 1
EC Risk (R No.):	23, 45, 48
EC Safety (S No.):	45, 53

^(a) Hazardous components 1 % or greater; carcinogens 0.1 % or greater are listed in compliance with OSHA 29 CFR 1910.1200.

3. HAZARDS IDENTIFICATION

NFPA Ratings (Scale 0-4): Health = 1 Fire = 0 Reactivity = 0
Major Health Hazards: Cancer hazard (in humans)

Potential Health Effects

Inhalation:

Inhalation of grunerite asbestos dust may be irritating. Symptoms include a cough and chest pain. Chronic exposure may cause asbestosis, interstitial fibrosis of the lung tissue, which may develop within 4 years to 9 years, but onset may be typically delayed 20 years to 40 years after first exposure. Death from asbestosis may be due to respiratory or cardiac failure. Secondary lung infections may also occur. Chronic exposure of asbestos to workers may also cause pleural effusion as early as 3 years to 4 years after initial exposure. Chronic exposure of asbestos to workers also increases the chance of pleural and peritoneal mesotheliomas, bronchogenic carcinoma, lung cancer, and cancers of the gastrointestinal tract and larynx. The latent period for mesothelioma is 3 years to 40 years; for lung cancer, 15 years to 30 years.

Skin Contact:

Direct contact may cause irritation. Asbestos fibers may penetrate the skin and result in "asbestos corns", due to thickening of the skin around the implanted fiber. These corns usually occur on the hands and forearms, and they disappear on removal of the fibers.

Eye Contact:

Direct contact may cause irritation with redness due to mechanical action.

Ingestion:

Acute exposure by cause gastrointestinal irritation. Chronic exposure of asbestos fibers may be involved in cancers of the buccal cavity and pharynx, esophagus, stomach, colon, and rectum.

Listed as a Carcinogen/ Potential Carcinogen:

Yes	No	
<u>X</u>	_____	In the National Toxicology Program (NTP) Report on Carcinogens.
<u>X</u>	_____	In the International Agency for Research on Cancer (IARC) Monographs.
<u>X</u>	_____	By the Occupational Safety and Health Administration (OSHA).

4. FIRST AID MEASURES

Inhalation:

If adverse effects occur, remove to uncontaminated area. If not breathing, give artificial respiration by qualified personnel. Get immediate medical attention.

Skin Contact:

Rinse affected area with copious amounts of water followed by washing with soap and water for at least 15 minutes while removing contaminated clothing. Get medical attention, if needed.

Eye Contact:

Flush eyes, including under the eyelids, with copious amounts of water for at least 15 minutes. Get immediate medical attention.

Ingestion:

If a large amount is swallowed, get immediate medical attention.

5. FIRE FIGHTING MEASURES

Fire and Explosion Hazards:

Asbestiform grunerite is a negligible fire hazard.

Extinguishing Media:

Regular dry chemical. Carbon dioxide. Water. Regular foam.

Fire Fighting:

If material is involved in a fire, extinguish fire with a medium appropriate for the surrounding fire. Material itself does NOT burn or burns with difficulty. Keep run-off water out of sewers and water sources. Wear full protective clothing and NIOSH-approved self-contained breathing apparatus (SCBA).

Component:

Asbestiform Grunerite

Flash Point:

Not applicable.

Method Used:

Not applicable.

Autoignition Temp.:

Not applicable.

Flammability Limits in Air

UPPER (Volume %):

Not applicable.

LOWER (Volume %):

Not applicable.

6. ACCIDENTAL RELEASE MEASURES

Occupational Release: Do NOT touch or walk through spilled material. Avoid inhalation of asbestos dust (see Section 8, "Exposure Controls and Personal Protection"). Collect small dry spills with a shovel and place material into an appropriate container for disposal. Prevent entry into waterways and sewers. Clean up residue with a HEPA filter vacuum.

Disposal: Refer to Section 13, "Disposal Considerations".

7. HANDLING AND STORAGE

Storage: Store and handle in accordance with all current regulations and standards.

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

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits: **Asbestiform Grunerite**
OSHA (PEL): 0.1 fibers/cc TWA
ACGIH (TLV): 0.1 fibers/cc TWA
NIOSH: 0.1 fibers/cc recommended TWA (10 h)

Quartz

OSHA (PEL): 0.3 mg/m³ TWA (total dust) 30 mg/m³/% SiO₂ + 2, based on size/aerodynamic characteristics
OSHA (PEL): 0.1 mg/m³ TWA (respirable dust) 10 mg/m³/% SiO₂ + 2, based on size/aerodynamic characteristics
ACGIH (TLV): 0.025 mg m³ TWA (respirable dust)
NIOSH: 0.05 mg/m³ recommended TWA (10 h) (respirable dust)
UK WEL: 0.3 mg/m³ TWA (respirable particulate) (Chemical Hazard Alert Notice issued).

Ventilation: Provide local exhaust ventilation system equipped with a HEPA-filter dust collection system.

Respirator: If workplace conditions warrant a respirator's use, a NIOSH/MSHA approved respirator should be used under an implemented respiratory protection program in accordance with OSHA Standard 29 CFR 1910.134 (General Industry, Use of Respirators) and 29 CFR 1910.1001 for occupational exposure to asbestos.

Eye Protection: Wear safety goggles. An eye wash station should be readily available near areas of use.

Personal Protection: Wear appropriate protective clothing and gloves to prevent skin exposure. Refer to OSHA Regulated Substances: OSHA 29 CFR 1910.1001.

9. PHYSICAL AND CHEMICAL PROPERTIES

Component: **Asbestiform Grunerite**
Appearance: Fibrous solid to dust-like powder. Grey-brown to light brown. Odorless.
Relative Molecular Mass: Not applicable.
Molecular Formula: Fe²⁺₇(Si₈O₂₂)(OH)₂
Water Solubility: Insoluble

10. STABILITY AND REACTIVITY

Stability: X Stable Unstable

Stable at normal temperatures and pressure.

Conditions to Avoid: Avoid generating dust. Keep out of water supplies and sewers.

Incompatible Materials: May be attacked by strong acids.

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

Hazardous Decomposition: Completely decomposes at temperatures of 1 000 °C.

Hazardous Polymerization: _____ Will Occur X Will Not Occur

11. TOXICOLOGICAL INFORMATION

Route of Entry: X Inhalation X Skin X Ingestion

Toxicity Data: **Asbestiform Grunerite**
Rat, Intrapleural TD_{LO}: 150 mg/kg

**Tumorigenic, Reproductive,
Mutagenic Data:** Asbestiform grunerite has been investigated as a tumorigenic and mutagenic effector.

**Health Effects
(Acute and Chronic):** See Section 3: "Hazards Identification" for potential health effects.

12. ECOLOGICAL INFORMATION

Ecotoxicity Data: Not available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with all applicable federal, state, and local regulations.

14. TRANSPORTATION INFORMATION

U.S. DOT and IATA: **U.S. DOT and IATA:** Asbestos; UN2212; Hazard Class 9
NOTE: This material, as packaged for SRM 1866b, is not subject to the regulations per DOT Special Provision 156 and IATA special Provision A61.

15. REGULATORY INFORMATION

U.S. Regulations: CERCLA Sections 102a/103 (40 CFR 302.4): Asbestos: 1 lbs RQ.
SARA Title III Section 302 (40 CFR 355.30): Not regulated.
SARA Title III Section 304 (40 CFR 355.40): Not regulated.
SARA Title III Section 313 (40 CFR 372.65): Asbestos.
OSHA Process Safety (29 CFR 1910.119): Not regulated.
SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21):
 ACUTE: No.
 CHRONIC: Yes.
 FIRE: No.
 REACTIVE: No.
 SUDDEN RELEASE: No.

State Regulations: California Proposition 65: Asbestos is known to the state of California to cause cancer (Feb. 27, 1987).

**CANADIAN Regulations
WHMIS Classification:** Not determined for this material.

**EUROPEAN Regulations
EC Classification (assigned):** T Toxic.
 Carcinogen Category 1

EC Risk Phrases: R45 May cause cancer.
 R23/48 Toxic: danger of serious damage to health by prolonged exposure through inhalation.

EC Safety Phrases: S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
 S53 Avoid exposure.

National Inventory Status

U.S. Inventory (TSCA): Asbestos: Not listed on inventory.

TSCA 12(b)

Export Notification: Asbestos: CAS No.: 1332-21-4
Section 6

16. OTHER INFORMATION

Sources: MDL Information Systems, Inc., MSDS *Amosite*, 16 June 2005.

Disclaimer: Physical and chemical data contained in this MSDS are provided only for use as a guide in assessing the hazardous nature of the material. The MSDS was prepared carefully, using current references; however, NIST does not certify the data in the MSDS. The certified values for this material are given in the NIST Certificate of Analysis.

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SRM Name: Common Commercial Asbestos

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Description: Standard Reference Material (SRM) 1866b is a set of three individual commercial-grade asbestos materials: chrysotile, asbestiform grunerite (amosite), and **asbestiform riebeckite (crocidolite)**. A unit of SRM 1866b consists of three bottles, each containing between 1 gram and 3 grams of individual material.

Substance: Asbestiform Riebeckite

2. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS^(a)

Component:	Asbestiform Riebeckite
Other Designations:	Asbestiform Riebeckite (blue asbestos; crocidolite; asbestos; crocidolite asbestos)
CAS Number:	12001-28-4
EC Number (EINECS):	Not assigned.
SRM Nominal Concentration (% by weight or volume):	> 90
Component:	Magnetite (as an impurity)
Other Designation:	Magnetite (magnetic iron oxide; black iron oxide; magnetic iron ore; lodestone; black ferric oxide)
CAS Number:	1309-38-2
EC Number (EINECS):	215-169-8
SRM Nominal Concentration (% by weight):	< 5
EC Classification:	T Carcinogen Category 1
EC Risk (R No.):	23, 45, 48
EC Safety (S No.):	45, 53

^(a) Hazardous components 1 % or greater; carcinogens 0.1 % or greater are listed in compliance with OSHA 29 CFR 1910.1200.

3. HAZARDS IDENTIFICATION

NFPA Ratings (Scale 0–4): Health = 1 Fire = 0 Reactivity = 0

Major Health Hazards: Cancer hazard (in humans)

Potential Health Effects

Inhalation:

Inhalation of riebeckite asbestos dust may be irritating. Symptoms include a cough and chest pain. Chronic exposure may cause asbestosis, interstitial fibrosis of the lung tissue, which may develop within 4 years to 9 years, but onset may be typically delayed 20 years to 40 years after first exposure. Death from asbestosis may be due to respiratory or cardiac failure. Secondary lung infections may also occur. Chronic exposure of asbestos to workers may also cause pleural effusion as early as 3 years to 4 years after initial exposure. Chronic exposure of asbestos to workers also increases the chance of pleural and peritoneal mesotheliomas, bronchogenic carcinoma, lung cancer, and cancers of the gastrointestinal tract and larynx. The latent period for mesothelioma is 3 years to 40 years; for lung cancer, 15 years to 30 years.

Skin Contact: Direct contact may cause irritation. Asbestos fibers may penetrate the skin and result in "asbestos corns", due to thickening of the skin around the implanted fiber. These corns usually occur on the hands and forearms, and they disappear on removal of the fibers.

Eye Contact: Direct contact may cause irritation with redness due to mechanical action.

Ingestion: Acute exposure by cause gastrointestinal irritation. Chronic exposure of asbestos fibers may be involved in cancers of the buccal cavity and pharynx, esophagus, stomach, colon, and rectum.

**Listed as a Carcinogen/
Potential Carcinogen:**

Yes	No	
<u>X</u>	_____	In the National Toxicology Program (NTP) Report on Carcinogens.
<u>X</u>	_____	In the International Agency for Research on Cancer (IARC) Monographs.
<u>X</u>	_____	By the Occupational Safety and Health Administration (OSHA).

4. FIRST AID MEASURES

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

Skin Contact: Rinse affected area with copious amounts of water followed by washing with soap and water for at least 15 minutes while removing contaminated clothing. Get medical attention, if needed.

Eye Contact: Flush eyes, including under the eyelids, with copious amounts of water for at least 15 minutes. Get immediate medical attention.

Ingestion: Get immediate medical attention. If vomiting occurs, keep head lower than hips to prevent aspiration. Give artificial respiration, if not breathing, by qualified personnel.

5. FIRE FIGHTING MEASURES

Fire and Explosion Hazards: Asbestiform Riebeckite

Extinguishing Media: Regular dry chemical. Carbon dioxide. Water. Regular foam.

Fire Fighting: If material is involved in a fire, extinguish fire with a medium appropriate for the surrounding fire. Material itself does NOT burn or burns with difficulty. Keep run-off water out of sewers and water sources. Wear full protective clothing and NIOSH-approved self-contained breathing apparatus (SCBA).

Component: Asbestiform Riebeckite

Flash Point: Not applicable.

Method Used: Not applicable.

Autoignition Temp.: Not applicable.

Flammability Limits in Air

UPPER (Volume %): Not applicable.

LOWER (Volume %): Not applicable.

6. ACCIDENTAL RELEASE MEASURES

Occupational Release: Do NOT touch or walk through spilled material. Avoid inhalation of asbestos dust (see Section 8, "Exposure Controls and Personal Protection"). Collect small dry spills with a shovel and place material into an appropriate container for disposal. Prevent entry into waterways and sewers. Clean up residue with a HEPA filter vacuum.

Disposal: Refer to Section 13, "Disposal Considerations".

7. HANDLING AND STORAGE

Storage:	Store and handle in accordance with all current regulations and standards. Store in a cool, dry place.
Safe Handling Precautions:	See Section 8, "Exposure Controls and Personal Protection".

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits:	Asbestiform Riebeckite OSHA (PEL): 0.1 fibers/cc TWA ACGIH (TLV): 0.1 fibers/cc TWA NIOSH: 0.1 fibers/cc recommended TWA (10 h)
Ventilation:	Provide local exhaust ventilation system equipped with HEPA-filter dust collection system.
Respirator:	If workplace conditions warrant a respirator's use, a NIOSH/MSHA approved respirator should be used under an implemented respiratory protection program in accordance with OSHA Standard 29 CFR 1910.134 (General Industry, Use of Respirators) and 29 CFR 1910.1001 for occupational exposure to asbestos.
Eye Protection:	Wear safety goggles. An eye wash station should be readily available near areas of use.
Personal Protection:	Wear appropriate protective clothing and gloves to prevent skin exposure. Refer to OSHA Regulated Substances: OSHA 29 CFR 1910.1001.

9. PHYSICAL AND CHEMICAL PROPERTIES

Component:	Asbestiform Riebeckite
Appearance:	Fibrous solid to dust-like powder. Blue to purple color. Odorless.
Molecular Formula:	$\text{Na}_2(\text{Fe}^{2+}_3\text{Fe}^{3+}_2)(\text{Si}_8\text{O}_{22})(\text{OH})_2$
Water Solubility:	Insoluble.

10. STABILITY AND REACTIVITY

Stability:	<input checked="" type="checkbox"/> Stable <input type="checkbox"/> Unstable
	Stable at normal temperatures and pressure.
Conditions to Avoid:	Avoid generating dust. Keep out of water supplies and sewers.
Incompatible Materials:	May be attacked by strong acids.
Fire/Explosion Information:	See Section 5, "Fire Fighting Measures".
Hazardous Decomposition:	Completely decomposes at temperatures of 1 000 °C.
Hazardous Polymerization:	<input type="checkbox"/> Will Occur <input checked="" type="checkbox"/> Will Not Occur

11. TOXICOLOGICAL INFORMATION

Route of Entry:	<input checked="" type="checkbox"/> Inhalation <input checked="" type="checkbox"/> Skin <input checked="" type="checkbox"/> Ingestion
Toxicity Data:	Asbestiform Riebeckite Rat, Intraperitoneal LD ₅₀ : 300 mg/kg Rat, Inhalation-Intermittent TC ₁₀ : 7 200 µg/m ³ (6 h – 20 days) Rat, Inhalation-Intermittent TC ₁₀ : 13 600 µg/m ³ (6 h – 5 days)
Tumorigenic, Reproductive, Mutagenic Data:	Riebeckite asbestos has been investigated as a tumorigenic and mutagenic effector.
Health Effects (Acute and Chronic):	See Section 3: "Hazards Identification" for potential health effects.

12. ECOLOGICAL INFORMATION

Ecotoxicity Data: Not available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with all applicable federal, state, and local regulations.

14. TRANSPORTATION INFORMATION

U.S. DOT and IATA: **U.S. DOT and IATA:** Asbestos; UN2212; Hazard Class 9
NOTE: This material, as packaged for SRM 1866b, is not subject to the regulations per DOT Special Provision 156 and IATA special Provision A61.

15. REGULATORY INFORMATION

U.S. Regulations: CERCLA Sections 102a/103 (40 CFR 302.4): Asbestos: 1 lbs RQ.
SARA Title III Section 302 (40 CFR 355.30): Not regulated.
SARA Title III Section 304 (40 CFR 355.40): Not regulated.
SARA Title III Section 313 (40 CFR 372.65): Asbestos.
OSHA Process Safety (29 CFR 1910.119): Not regulated.
SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21):

ACUTE: No.
CHRONIC: Yes.
FIRE: No.
REACTIVE: No.
SUDDEN RELEASE: No.

State Regulations: California Proposition 65: Asbestos is known to the state of California to cause cancer (Feb. 27, 1987)

CANADIAN Regulations

WHMIS Classification: Not determined.

EUROPEAN Regulations

EC Classification (assigned): T Toxicity.
Carcinogen Category 1.

EC Risk Phrases: R45 May cause cancer.
R23/48 Toxic: danger of serious damage to health by prolonged exposure through inhalation.

EC Safety Phrases: S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S53 Avoid exposure.

National Inventory Status

U.S. Inventory (TSCA): Asbestos: Not listed on inventory.

TSCA 12(b)

Export Notification: Asbestos: CAS No. 1332-21-4
Section 6

16. OTHER INFORMATION

Sources: MDL Information Systems, Inc., MSDS *Crocidolite*, 14 September 2006.

Disclaimer: Physical and chemical data contained in this MSDS are provided only for use as a guide in assessing the hazardous nature of the material. The MSDS was prepared carefully, using current references; however, NIST does not certify the data in the MSDS. The certified values for this material are given in the NIST Certificate of Analysis.