



Exposición a Sustancias Cancerígenas

Propongo una discusión?



Riesgos Asociados con el uso de sustancias cancerígenas

- **CANCERÍGENOS:** agentes o sustancias que producen cáncer
- **GENOTOXICOS:** agentes o sustancias que producen **DEFECTOS GENÉTICOS;** producen cáncer

Categorías en la Clasificación de Tóxicos por su Efecto

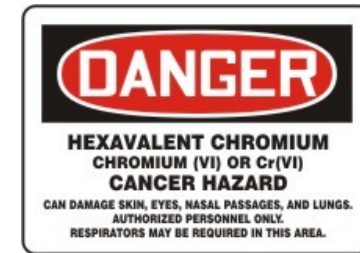
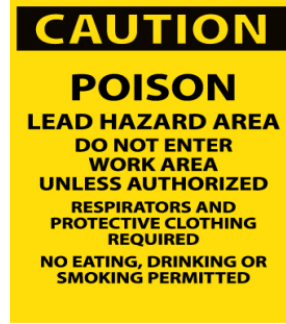
Toxicidad: Capacidad de un agente (físico, químico o biológico) de producir perjuicio.

Toxicología: La ciencia que estudia las acciones dañinas de agentes o sustancias sobre los biomecanismos.



Algunos Cancerígenos

- Plomo (Lead)
- Niquel (Nickel)
- Cromo Hexavalente (Hexavalent Chromium)
- Radiación Gama y Rayos-X (Gamma and X-Ray Radiation)
- Radiación Solar y Ultra Violeta (Solar and UV Radiation)
- Varillas de soldar que contienen Torio (Thoriated Rods)
- Varillas y metales que contienen Cadmio (Cadmium)
- Estireno (Styrene)
- Benceno (Benzene)



Algunos Cancerígenos más

- Cloruro de Vinilo (Vinyl Chloride)
- Formaldehído (Formaldehyde)
- Aserrín (Wood Dust)
- Arsénico (Arsenic)
- Bituminosos (Bitumastic/Coal Tar Pitch)
- Sílice Cristalina (Crystalline Silica)



Vinyl chloride

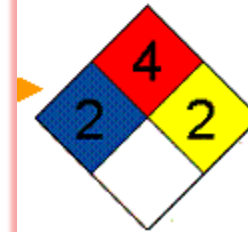
CAS 75-01-4
UN 1086

[GUIDE P116 - Gases - Flammable \(Unstable\)](#)

Colorless gas; sweet odor

Known Carcinogen

NFPA Information



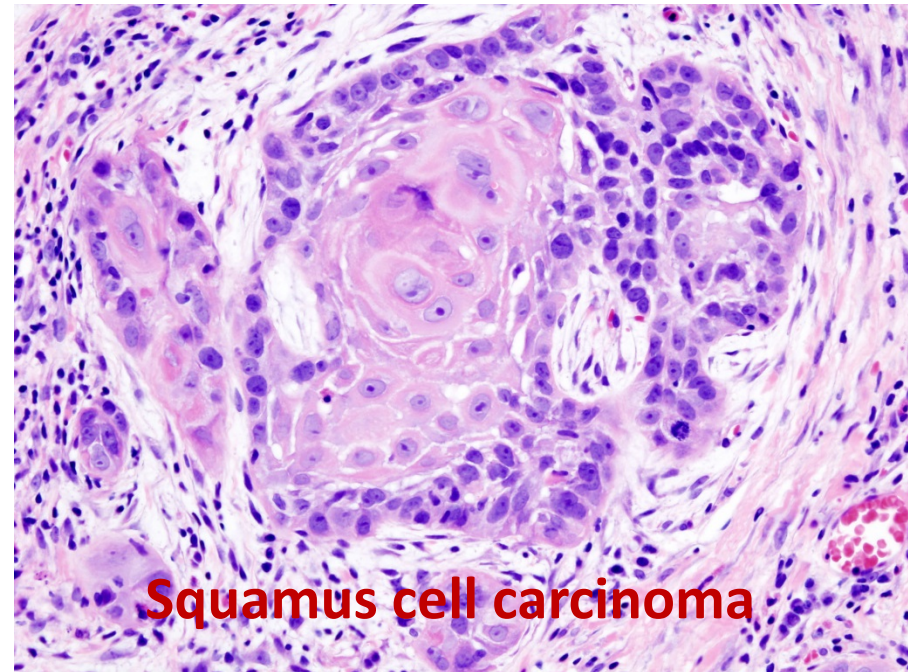
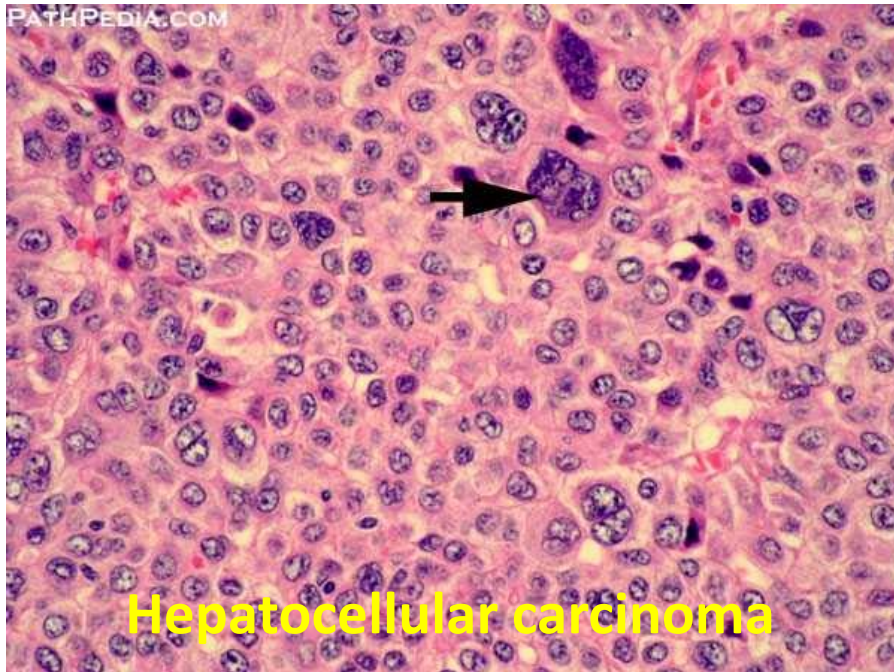
Health (Blue): 2
Hazardous
Fire (Red): 4 Flash
Point < 73°F
Instability (Yellow): 2
Violent Chemical
Change



WARNING Drilling, Sawing, Sanding Or Machining Wood Products Generates Wood Dust, A Substance Known To The State Of California To Cause Cancer. Avoid Inhaling Wood Dust Or Use A Dust Mask Or Other Safeguards For Personal Protection. California Health And Safety Code Section 25249.6
ADVERTENCIA Las Operaciones De Taladrado, Aserrado, Arenado O Maquinado En Los Productos De Madera Generan Polvo De Madera, Una Sustancia Conocida En El Estado De California Por Causar Cáncer. Evite Inhalar Polvo De Madera O Use Una Máscara De Polvo U Otros Accesorios De Protección Para La Protección Personal. Sección 25249.6 Del Código De Salud Y Seguridad De California

Exposición a Sustancias Cancerígenas

Una discusión?



CLASIFICACION DE TOXICOS

Extremadamente tóxico	1 mg/Kg	1-10 ppm
Altamente tóxico	1 - 50 mg/Kg	11-100 ppm
Moderadamente tóxico	50-500 mg/Kg	101-500 ppm
Ligeramente tóxico	0.5-5 gm/Kg	501-2000ppm
Prácticamente no tóxico	5-15 gm/Kg	más de 2000ppm
Relativamente inocuo	más de 15 gm/Kg	

N.B. $\text{ppm} = (\text{mg}/\text{M}^3)(24.45)/\text{Peso Mol}$ $\text{mg}/\text{M}^3 = (\text{ppm})(\text{Peso Mol})/24.45$

Clasificación de Tóxicos en base a la Dosis: Cantidad del agente o sustancia que entra en contacto con, o que entra al, organismo.

SISTEMA DE INFORMACION SOBRE MATERIALES PELIGROSOS

- **FABRICANTE.....PROBAR HAZMAT Y
PUBLICAR INFO**
- **GERENCIA.....ADQUIRIR Y FACILITAR
LA INFO SOBRE EL HAZMAT**
- **EMPLEADOS.....LEER, CONOCER Y
SEGUIR RECOMENDACIONES**

INFO SOBRE MATERIALES PELIGROSOS

- **ETIQUETA**
- **ETIQUETA(s) DE ADVERTENCIA**
- **HOJA DE DATOS TECNICOS**
- **INTERNET**
- **MSDS - HOJA DE DATOS DE
SEGURIDAD**



ETIQUETAS DE INFORMACION DE MATERIALES PELIGROSOS

- Nombre del Producto
- Efecto sobre la Salud
- Riesgo de Incendio
- Actividad Química
- EPP
- Instrucciones Especiales



CAUTION

CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
BREATHING ASBESTOS DUST
MAY CAUSE SERIOUS
BODILY HARM

ETIQUETAS DE ADVERTENCIA (WARNING LABELS)

SOBRE MATERIALES PELIGROSOS



Danger
asbestos



**CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD**

Asbestos

HEALTH
SALUD

4

FLAMMABLE
INFLAMABILIDAD

0

REACTIVITY
REACTIVIDAD

0

PERSONAL PROTECTION
PROTECCION PERSONAL

X

Procedimiento para
trabajo con Asbestos

ASBESTOS FREE →

ASBESTOS INSULATION →

**THIS PRODUCT
IS
ASBESTOS
FREE**

**NON
ASBESTOS
MATERIAL**

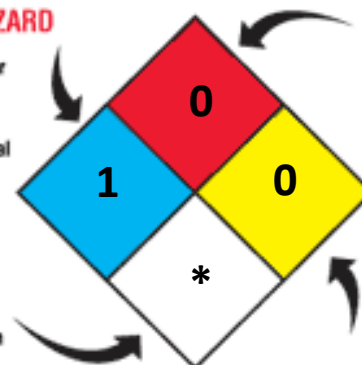
HEALTH HAZARD

4 Deadly
3 Extreme danger
2 Hazardous
1 Slightly
hazardous
0 Normal material

SPECIFIC HAZARD

ACID Acid
ALK Alkali
COR Corrosive
OXY Oxidizer
P Polymerization
* Radioactive
W Use No Water

CHEMICAL NAME



Asbestos

FIRE HAZARD

Flash Points
4 Below 73 F
3 Below 100 F
2 Above 100 F not
exceeding 200 F
1 Above 200 F
0 Will not burn

INSTABILITY

4 May detonate
3 Shock & heat
may detonate
2 Violent
chemical change
1 Unstable if heated
0 Stable

PRODUCT DATA-SHEET

SMH PVA ASBESTOS SEALANT BINDER

PRODUCT FEATURES:

Excellent fibre binder,
Water based,
Easily applied by brush and spray gun,
Non-flammable,
Slight Odour,
SMH P.V.A Asbestos Sealant Binder is a water based thick white fluid used to encapsulate asbestos fibres by coating with brush or spray.

SMH P.V.A Asbestos Sealant Binder is supplied ready for use although it can be diluted with water for certain applications. To spray dilute 8: 1. This products bonds well to concrete, brick, wood and also acts as a primer on porous surfaces.

SMH P.V.A. Asbestos Sealant Binder is water based and non-flammable in its wet state. When dry this product will burn!

TECHNICAL DATA:

TYPE: P.V.A
CONSISTENCY: Thick Liquid
COLOUR: White
SPECIFIC GRAVITY: 1.07
BASE: Water
APPLICATION METHOD
Brush / Spray

COVERAGE

Subject to the nature of the material being removed. Varies with substrate absorbency, density and thickness.

MAXIMUM DILUTION RATE: 8 parts water to 1 part Asbestos Sealant Binder

APPLICATION TEMPERATURE: +5 deg.C to +50 deg.C

SERVICE TEMPERATURE: -200C to +120 deg.C

DRYING TIME: Overnight at surface.

CLEAN UP

After use apply water to equipment and clean whilst still wet. Wash hands thoroughly. Dried Adhesive should be removed from equipment and surfaces with a suitable cleaner.

FLAMMABILITY

Non-flammable (wet). When dry, binding the Asbestos Containing Material, the fire hazard will be negligible.

STORAGE: Store in clean dry conditions between 5 deg.C and 30 deg.C.

IDENTIFICATION OF THE SUBSTANCE/ PREPARATION AND COMPANY

Product Name: P.V.A Asbestos Sealant Binder

Supplier: SMH PRODUCTS LTD
Maxwell Street
South Shields
Tyne and Wear
NE33 4PU - England

COMPOSITION /IN FORMATION ON INGREDIENTS

Synthetic resin emulsion adhesive.
No hazardous materials as defined by Chemicals (Hazard Information and Packaging) Regulations 1993.

HAZARDS IDENTIFICATION: Does not present a hazard under normal conditions of use.

FIRST-AID MEASURES

Inhalation: Discomfort can be relieved by breathing fresh air. Then seek medical advice.

Eye contact: Splashes in the eye must be washed out immediately with clean water for at least 10 minutes, then seek medical advice.

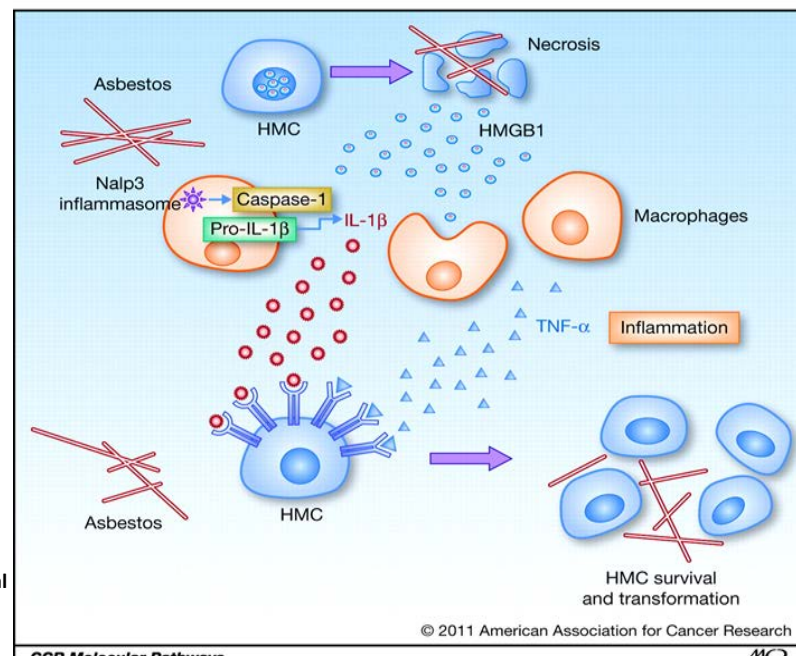
Hoja de Datos Técnicos

Información básica:

Características generales

Data Técnica

Hoja de Seguridad



MATERIAL SAFETY DATA SHEET

1. SUBSTANCE AND SOURCE IDENTIFICATION

National Institute of Standards and Technology SRM Number: 1866b
Standard Reference Materials Program MSDS Number: 1866b
100 Bureau Drive, Stop 2300 SRM Name: Common Commercial Asbestos
Gaithersburg, Maryland 20899-2300

MSDS Coordinator: Mario Cellarosi
Telephone: 301-975-6776
FAX: 301-926-4751
Date of Issue: 09 January 2007
Emergency Telephone ChemTrec:
1-800-424-9300 (North America)
+1-703-527-3887 (International)

E-mail: SRMMSDS@nist.gov

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) [OSHA / IARC / NTP / NIOSH]

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. Exposure Limits: Chrysotile - OSHA (PEL): 0.1 fibers/cc TWA

MSDS

Secciones básicas:

Sección 1. Identificación

Sección 2. Componentes

Peligrosos, TLV/PEL

Sección 3. Características
físicas y químicas

Sección 4. Riesgo a la Salud

Sección 5. Medidas de control
de Fuego y Riesgo
de Incendio

Sección 6. Reactividad

Sección 7. Almacenamiento
y Manejo, Control de
Derrames

Sección 8. PPE

ref: OSHA Form 20

Exposición a Sustancias Cancerígenas

Una discusión nos apremia

Cancerígenos

TLV o PEL

0.2 - 10 ppm

Hazmat TLV o PEL

IDLH

100 ppm

10^3 ppm

10^4 ppm

10^5 ppm

10^6 ppm

AIRE PURO
0%

10% LEL
.1%

LEL
1%

UEL
10%

COMPUESTO PURO
100%

S A L U D

S E G U R I D A D

SISTEMA DE INFORMACION SOBRE MATERIALES CANCERIGENOS

- **FABRICANTE.....PROBAR HAZMAT Y PUBLICAR INFO sobre CANCERIGENOCIDAD**
- **GERENCIA**
 - **ADQUIRIR Y FACILITAR LA INFO;**
 - **IMPLEMENTAR POLITICA DE SUSTITUCION;**
 - **ESTABLECER BASE DE DATOS SOBRE CANCERIGENOS UTILIZADOS Y SOBRE EL PERSONAL EXPUESTO;**
 - **PONDERAR EL NIVEL DE EXPOSICION Y MANTENER INFORMACION DE EXPOSICION 30 AÑOS**
- **EMPLEADOS.....LEER, CONOCER Y SEGUIR RECOMENDACIONES**

Fin // Fine

End // Einde

Understanding Hazard Warning Labels

The colors are for different hazard types:

- Blue represents health hazards
- Red represents flammability hazards
- Yellow represents instability hazards
- White represents other hazards or special handling recommendations

NUMBER SYSTEM ranging from 0 to 4.

- The number 0 represent NO hazard
- The number 1 represents SLIGHT hazard.
- The number 2 represents MODERATE hazard.
- The number 3 represents SERIOUS hazard.
- The number 4 represents EXTREME hazard.