TMX is a Division of Thyssen Inc., N.A.

MATERIAL SAFETY DATA SHEET

SECTION I. MATERIAL IDENTIFICATION

COMPANY
Thyssen Inc. N.A./TMX Division
400 Renaissance Center, Suite 1800
Detroit, Michigan 48243

RE-ISSUE DATE
1-May-99

IDENTIFICATION NUMBER
N/A

TRADE NAME
Micarta

EMERGENCY PHONE NUMBER
(313) 567-5282

PREPARED BY:
L. J. Swita

CHEMICAL NAME
Glass cloth, paper, silicon, phenolic & melamine epoxy composite

FORMULA
N/A

DOT IDENTIFICATION NO.
N/A

SECTION II. HAZARDOUS INGREDIENTS

MATERIAL OR COMPONENT
CAS NUMBER
% COMPOSITION
BY WEIGHT
OSHA-PEL
8-HR TWA
ACGIH TLV
8-HR TWA

PHENOL
108-95-2
<8-12
19 mg/m3
19 mg/m3
5.0 ppm
5.0 ppm

FORMALDEHYDE
50-00-0
<2
.75 ppm
.30 ppm

METHANOL
67-56-1
<10-11
200 ppm
200 ppm

MOLYBDENUM
1317-33-5
DISULFIDE
10 mg/m3
10 mg/m3

SILICA
60676-86-0
0.1 mg/m3
0.1 mg/m3

SILICON
7440-21-3
5.0 mg/m3
10.0 mg/m3

CRESYLIC ACID
N/A
<4
5 ppm
22.0 mg/m3

This product is a thermostatic composite consisting of a cured phenol-formaldehyde on a cellulose substrate. OSHA PEL and ACGIH TLV have not been established for this material. Formaldehyde has been determined to be a "POTENTIAL CANCER HAZARD" by OSHA per the standard promulgated 12-4-87 (29 CFR SEC. 1910.1049 FR. VOL 52 NO. 233). Precautions must be taken when formaldehyde is present in the air at concentrations greater than 0.1 ppm as described in the standard. Micarta products may be comprised of all or variations of the ingredients shown here. PEL=Permissible Exposure Limit

(1) % of the Products Material Varies with Grade of Material. Other trace elements of <1% May be in Present.

SECTION III. PHYSICAL DATA

MATERIAL (At Normal Conditions)
SOLID
APPEARANCE AND ODOR
Flat or shapes - natural in color - slight phenolic odor

MELTING POINT
N/A
SPECIFIC GRAVITY
1.3 -1.4

SECTION IV. FIRE AND EXPLOSIVE

SPECIAL FIRE FIGHTING PROCEDURES
Same as for wood fire - do not breathe fumes from burning laminate

SECTION V. REACTIVITY DATA

STABILITY
Stable

CONDITIONS TO AVOID
Strong Oxidizing agents

HAZARDOUS DECOMPOSITION OR BYPRODUCTS: Carbon dioxide, carbon monoxide, phenols, methane, formaldehyde & hydrocarbons

Dust Or Fumes May Be Produced During Burning, Grinding And Possibly Machining. Refer To ANSI Z49.1

SECTION VI. ENVIRONMENTAL

SPILL OR LEAK PROCEDURES
N/A

WASTE DISPOSAL METHODS
Disposal must comply with applicable Federal, State and Local disposal and discharge laws.
SECTION VII. HEALTH HAZARD DATA

NOTE: MICARTA PRODUCTS IN THEIR NATURAL STATE DO NOT PRESENT AN INHALATION OR CONTACT HAZARD, HOWEVER OPERATIONS SUCH AS BURNING, WELDING, SAWING, BRAZING AND GRINDING MAY RELEASE FUMES AND/OR DUST WHICH MAY PRESENT HEALTH HAZARDS.

EFFECTS OF OVEREXPOSURE:

Acute - Dust or fume may cause irritation to the eyes, nose, or throat. Inhalation of Formaldehyde dust or fume may cause cancer.

Chronic - A very small number of exposed people may develop an allergic reaction after prolonged or repeated exposure.

Phenol - Exposure may cause skin irritation and liver and kidney damage.

Formaldehyde - Exposure may cause irritation to the eyes, skin and respiratory system. Formaldehyde is listed as a suspected human carcinogen by ACGIH and as an animal carcinogen by IARC. OSHA describes formaldehyde in concentrations greater than .75 ppm in the air as a health hazard.

Methanol - Methanol has tested positive for carcinogenicity in rodents.

Molybdenum/ Disulfide - Exposure may cause skin and respiratory irritation, and liver and kidney damage.

Silica - Exposure may cause skin and respiratory irritation. Silica crystalline as a respiratory dust has caused lung cancer in animals.

Silicon - An accumulation of Silicon in the lungs may result in benign pneumoconiosis.

Cresylic Acid - Exposure may cause skin and respiratory irritation, and liver and kidney damage.

SECTION VIII. EMERGENCY AND FIRST AID PROCEDURES

Inhalation: In the event of excessive exposure to dust or fume, remove the employee to fresh air. If breathing is difficult administer artificial respiration or oxygen. Obtain immediate medical assistance.

Skin: Abrasions and cuts should be washed and closed by a clean compress and be immediately medically treated. Should skin irritation occur, wash affected area with mild soap and rinse with clean warm water.

Eyes: Depending on the type and nature of exposure, relief may be obtained by fresh air or rinsing the eyes with clean water. Obtain medical assistance.

Medical Conditions Aggravated by Exposure:

Persons with a predisposition to respiratory disorders may be adversely affected by particulates or respiratory irritants generated during the mfg. process.

SECTION IX. SPECIAL PROTECTION INFORMATION & CONTROL MEASURES

Note: Consult your regional codes or Code of Federal Regulations, Title 29, Part 1910, Subpart G-Occupational Health and Environmental Control, Subpart I Personal Protective Equipment, Subpart P-Welding, Cutting, and Brazing, and Subpart Z-Toxic and Hazardous Substances. Certain machining activities may produce hazardous substances such as carbon monoxide, carbon dioxide, phenols, methane, formaldehyde & hydrocarbons or produce inert suffocating atmospheres.

Ventilation: Local exhaust or ventilation systems sufficient to maintain exposure levels to contaminate below prescribed limits may be required. When inhalation controls are not sufficient to reduce the exposure below the applicable exposure limit then use OSHA/NIOSH approved respiratory protection within the use limitations of the respirator.

Personal: To avoid contact use appropriate protective gloves or clothing to protect against dust & cutting edges. Appropriate heat shielding garments should be used for activities using or generating heat. Eyes should be protected by using safety glasses, goggles, helmet, face shield as appropriate to the operation.

Precautions to be taken in handling and storage:

Be alert to sharp edges. Do not eat, drink or smoke in a dusty atmosphere.

SECTION X. OTHER INFORMATION

SARA Section 313 Toxic Chemical List, de minimis Concentrations

This product does not contain toxic chemicals subject to the reporting requirements of Section 312 and 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

NFPA Ratings (NFPA No. 704)

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<tr>
<th>HEALTH</th>
<th>FLAMMABILITY</th>
<th>REACTIVITY</th>
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<tr>
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