

**SAFETY DATA SHEET****MM488 LD RAM 2025 TYPE**Version Number 1.2  
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# SAFETY DATA SHEET

## MM488 LD RAM 2025 TYPE

### Section 1. Identification

**GHS product identifier** : MM488 LD RAM 2025 TYPE  
**Chemical name** : Mixture  
**CAS number** : Mixture  
**Other means of identification** : FO20023434  
**Product type** : liquid

**Relevant identified uses of the substance or mixture and uses advised against**

**Product use** : Industrial applications. Plastics.

**Supplier's details** : **POLYONE CORPORATION**  
33587 Walker Road, Avon Lake, OH 44012  
  
1 (440) 930-1000 or 1 (866) POLYONE

**Emergency telephone number (with hours of operation)** : **CHEMTREC 1-800-424-9300 (24hrs for spill, leak, fire, exposure or accident).**CHEMTREC 1-800-424-9300 (24hrs for spill, leak, fire, exposure or accident).

### Section 2. Hazards identification

This mixture has not been evaluated as a whole for health effects. Information provided on health effects of this product is based on the individual components. However, some vapors or contaminants may be released upon heating and the end-user (fabricator) must take the necessary precautions (mechanical ventilation, respiratory protection, etc.) to protect employees from exposure. See sections 8 and 11 for special precautions. After handling, always wash hands thoroughly with soap and water.

**OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Classification of the substance or mixture** : SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2B

**GHS label elements**

**Signal word** : Warning  
**Hazard statements** : Causes eye irritation.

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#### Precautionary statements

**General** : Not applicable.  
**Prevention** : Wear eye or face protection. Wash hands thoroughly after handling.  
**Response** : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.  
**Storage** : Not applicable.  
**Disposal** : Not applicable.  
**Supplemental label elements** : None known.  
**Hazards not otherwise classified** : None known.

### Section 3. Composition/information on ingredients

**Substance/mixture** : Mixture  
**Chemical name** : Mixture  
**Other means of identification** : FO20023434

#### CAS number/other identifiers

Ingredient name	%	CAS number
1,2-Benzenedicarboxylic acid, di-C8-10-branched alkyl esters, C9-rich	30 - 60	68515-48-0
Titanium dioxide	0.1 - 1	13463-67-7

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

**There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.**

Occupational exposure limits, if available, are listed in Section 8.

### Section 4. First aid measures

#### Description of necessary first aid measures

**Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the

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- upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. If irritation persists, get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

#### Most important symptoms/effects, acute and delayed

##### Potential acute health effects

- Eye contact** : Causes eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : May be irritating to mouth, throat and stomach.

##### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
irritation  
watering  
redness
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

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#### Indication of immediate medical attention and special treatment needed, if necessary

- |                                   |   |  |
|-----------------------------------|---|--|
| <b>Notes to physician</b>         | : | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.  |
| <b>Specific treatments</b>        | : | No specific treatment.   |
| <b>Protection of first-aiders</b> | : | No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. |

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

#### Extinguishing media

- |   |   |   |
|---|---|---|
| <b>Suitable extinguishing media</b>                   | : | In case of fire, use water spray (fog), foam, dry chemical or CO <sub>2</sub> .   |
| <b>Unsuitable extinguishing media</b>                 | : | None known.   |
| <b>Specific hazards arising from the chemical</b>     | : | In a fire or if heated, a pressure increase will occur and the container may burst.   |
| <b>Hazardous thermal decomposition products</b>       | : | May emit Hydrogen Chloride (HCl).<br>Decomposition products may include the following materials:<br>carbon dioxide<br>carbon monoxide<br>halogenated compounds                              |
| <b>Special protective actions for fire-fighters</b>   | : | Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. |
| <b>Special protective equipment for fire-fighters</b> | : | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.                         |

## Section 6. Accidental release measures

#### Personal precautions, protective equipment and emergency procedures

- |                                    |   |  |
|------------------------------------|---|--|
| <b>For non-emergency personnel</b> | : | No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is |
|------------------------------------|---|--|

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- For emergency responders** : inadequate. Put on appropriate personal protective equipment. If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

#### Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

#### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

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**Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
Titanium dioxide	<p><b>OSHA PEL 1989 (1989-03-01)</b>            PEL: Permissible Exposure Level 10 mg/m<sup>3</sup> Form: Total dust</p> <p><b>OSHA PEL (1993-06-30)</b>            PEL: Permissible Exposure Level 15 mg/m<sup>3</sup> Form: Total dust</p> <p><b>ACGIH TLV (1996-05-18)</b>            TLV-TWA: Threshold Limit Value - Time weighted average PEL:            Permissible Exposure Level 10 mg/m<sup>3</sup></p>

**Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a

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higher degree of protection: chemical splash goggles.

#### Skin protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

## Section 9. Physical and chemical properties

#### Appearance

- Physical state** : liquid [liquid]
- Color** : TAN
- Odor** : Not available.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point** : Not available.
- Boiling point** : Not available.
- Flash point** : Not available.
- Burning time** : Not available.
- Burning rate** : Not available.
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : **Lower:** Not available.  
**Upper:** Not available.
- Vapor pressure** : Not available.

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Vapor density	:	Not available.
Relative density	:	Not available.
Solubility	:	Not available.
Solubility in water	:	Not available.
Partition coefficient: n-octanol/water	:	Not available.
Auto-ignition temperature	:	Not available.
Decomposition temperature	:	Not available.
SADT	:	Not available.
Viscosity	:	<b>Dynamic:</b> Not available. <b>Kinematic:</b> Not available.

### Section 10. Stability and reactivity

Reactivity	:	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	:	Stable under recommended storage and handling conditions (see Section 7).
Possibility of hazardous reactions	:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	:	Keep away from extreme heat and oxidizing agents.
Incompatible materials	:	Avoid contact with acetal homopolymers and acetyl homopolymers during processing.
Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

### Section 11. Toxicological information

This mixture has not been evaluated as a whole for health effects. Exposure effects listed are based on existing health data for the individual components which comprise the mixture.

#### Information on toxicological effects

##### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
1,2-Benzenedicarboxylic acid, di-C8-10-branched alkyl esters, C9-rich	LD50 Oral	Rat	10,000 mg/kg	-
Titanium dioxide	LC50 Inhalation	Rat - Male	6.82 Mg/l	4 h
	LD50 Dermal	Rabbit	> 5,000 mg/kg	-

**Conclusion/Summary** : Mixture. Not fully tested.



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**Irritation/Corrosion**

Product/ingredient name	Result	Species	Score	Exposure	Observation
1,2-Benzenedicarboxylic acid, di-C8-10-branched alkyl esters, C9-rich	Eyes - Mild irritant	Rabbit			-

**Conclusion/Summary**

**Skin** : Mixture.Not fully tested.  
**Eyes** : Mixture.Not fully tested.  
**Respiratory** : Mixture.Not fully tested.

**Sensitization****Conclusion/Summary**

**Skin** : Mixture.Not fully tested.  
**Respiratory** : Mixture.Not fully tested.

**Mutagenicity****Conclusion/Summary**

: Mixture.Not fully tested.

**Carcinogenicity****Conclusion/Summary**

: Mixture.Not fully tested.

**Classification**

Product/ingredient name	OSHA	IARC	NTP
Titanium dioxide		2B	

**Reproductive toxicity****Conclusion/Summary**

: Mixture.Not fully tested.

**Teratogenicity****Conclusion/Summary**

: Mixture.Not fully tested.

**Specific target organ toxicity (single exposure)**

Not available.

**Specific target organ toxicity (repeated exposure)**

Not available.

**Aspiration hazard**

Not available.

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**Information on the likely routes of exposure** : Not available.

#### Potential acute health effects

**Eye contact** : Causes eye irritation.  
**Inhalation** : No known significant effects or critical hazards.  
**Skin contact** : No known significant effects or critical hazards.  
**Ingestion** : May be irritating to mouth, throat and stomach.

#### Symptoms related to the physical, chemical and toxicological characteristics

**Eye contact** : Adverse symptoms may include the following:  
 irritation  
 watering  
 redness  
**Inhalation** : No specific data.  
**Skin contact** : No specific data.  
**Ingestion** : No specific data.

#### Delayed and immediate effects and also chronic effects from short and long term exposure

##### Short term exposure

**Potential immediate effects** : Not available.  
**Potential delayed effects** : Not available.

##### Long term exposure

**Potential immediate effects** : Not available.  
**Potential delayed effects** : Not available.

#### Potential chronic health effects

**Conclusion/Summary** : Mixture. Not fully tested.  
**General** : No known significant effects or critical hazards.  
**Carcinogenicity** : No known significant effects or critical hazards.  
**Mutagenicity** : No known significant effects or critical hazards.  
**Teratogenicity** : No known significant effects or critical hazards.  
**Developmental effects** : No known significant effects or critical hazards.  
**Fertility effects** : No known significant effects or critical hazards.

#### Numerical measures of toxicity

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Acute toxicity estimates

Not available.

## Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Titanium dioxide			
	Acute LC50 > 1,000,000 µg/l Marine water	Fish - Mummichog	96 h
	Acute LC50 > 1,000 mg/l Fresh water	Fish - Fathead minnow	96 h
	Acute LC50 13 mg/l Fresh water	Aquatic invertebrates. Water flea	48 h
	Acute EC50 19.3 mg/l Fresh water	Aquatic invertebrates. Water flea	48 h
	Acute EC50 27.8 mg/l Fresh water	Aquatic invertebrates. Water flea	48 h
	Acute EC50 35.306 mg/l Fresh water	Aquatic invertebrates. Water flea	48 h

**Conclusion/Summary** : Not available.

Persistence and degradability

**Conclusion/Summary** : Not available.

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
1,2-Benzenedicarboxylic acid, di-C8-10-branched alkyl esters, C9-rich	8.8	3.00	low
Titanium dioxide		352.00	low

Mobility in soil

**Soil/water partition coefficient  
(KOC)** : Not available.

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**Other adverse effects** : No known significant effects or critical hazards.

### Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

**United States - RCRA Acute hazardous waste "P" List:** Not listed

**United States - RCRA Toxic hazardous waste "U" List:** Not listed

### Section 14. Transport information

U.S. DOT Classification : Not regulated for transportation.  
ICAO/IATA : Consult mode specific transport rules  
IMO/IMDG (maritime) : Consult mode specific transport rules

### Section 15. Regulatory information

**U.S. Federal regulations** : **United States - TSCA 12(b) - Chemical export notification:** None of the components are listed.  
**United States - TSCA 4(a) - Final Test Rules:** Listed **1,2-Benzenedicarboxylic acid, di-C8-10-branched alkyl esters, C9-rich**  
**United States - TSCA 4(a) - ITC Priority list:** Not listed  
**United States - TSCA 4(f) - Priority risk review:** Not listed  
**United States - TSCA 5(a)2 - Final significant new use rules:** Not listed

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**United States - TSCA 5(a)2 - Proposed significant new use rules:**  
Not listed

**United States - TSCA 5(e) - Substances consent order:** Not listed

**United States - TSCA 6 - Final risk management:** Not listed

**United States - TSCA 6 - Proposed risk management:** Not listed

**United States - TSCA 8(a) - Chemical risk rules:** Not listed

**United States - TSCA 8(a) - Dioxin/Furane precursor:** Not listed

**United States - TSCA 8(a) - Chemical Data Reporting (CDR):** Not determined

**United States - TSCA 8(a) - Preliminary assessment report (PAIR):** Not listed

**United States - TSCA 8(c) - Significant adverse reaction (SAR):**  
Not listed

**United States - TSCA 8(d) - Health and safety studies:** Not listed

**United States - TSCA 4(a) - Proposed test rules:** Not listed

**United States - EPA Clean water act (CWA) section 307 - Priority pollutants:** Listed    **Miscellaneous Zinc Compounds**  
2-Ethylhexanoic acid zinc salt  
Vinyl chloride monomer

**United States - EPA Clean water act (CWA) section 311 - Hazardous substances:** Not listed

**United States - EPA Clean air act (CAA) section 112 - Accidental release prevention - Flammable substances:** Not listed

**United States - EPA Clean air act (CAA) section 112 - Accidental release prevention - Toxic substances:** Not listed

**United States - Department of commerce - Precursor chemical:**  
Not listed

**Clean Air Act Section 112(b) :** Not listed

**Hazardous Air Pollutants (HAPs)**

**Clean Air Act Section 602 Class I Substances :** Not listed

**Clean Air Act Section 602 Class II Substances :** Not listed

**DEA List I Chemicals (Precursor Chemicals) :** Not listed

**DEA List II Chemicals (Essential Chemicals) :** Not listed

**US. EPA CERCLA Hazardous Substances (40 CFR 302)**

not applicable

**SARA 311/312**

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**Classification** : Immediate (acute) health hazard

Composition/information on ingredients

Name	%	Classification
1,2-Benzenedicarboxylic acid, di-C8-10-branched alkyl esters, C9-rich	30 - 60	AH
Titanium dioxide	0.1 - 1	CH

SARA 313

Not applicable.

State regulations

**Massachusetts** : None of the components are listed.  
**New York** : None of the components are listed.  
**New Jersey** : The following components are listed:  
 Ethene, chloro-, homopolymer  
 Titanium dioxide  
**Pennsylvania** : The following components are listed:  
 Titanium dioxide

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

**United States inventory (TSCA 8b)** : All components are listed or exempted.

**Canada inventory** : Not determined.

International regulations

**International lists** : **Australia inventory (AICS):** Not determined.  
**Taiwan inventory (CSNN):** Not determined.  
**Malaysia Inventory (EHS Register):** Not determined.  
**EINECS:** Not determined.  
**Japan inventory:** Not determined.  
**China inventory (IECSC):** Not determined.  
**Korea inventory:** Not determined.  
**New Zealand Inventory of Chemicals (NZIoC):** Not determined.  
**Philippines inventory (PICCS):** Not determined.

**Chemical Weapons Convention List Schedule I Chemicals** : Not listed

**Chemical Weapons Convention** : Not listed

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List Schedule II Chemicals  
Chemical Weapons Convention : Not listed  
List Schedule III Chemicals

**Section 16. Other information****History**

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Date of previous issue : 12/22/2014  
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Key to abbreviations : ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
UN = United Nations

References : Not available.

**Notice to reader**

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist. Particularly this information may not be valid for such material used in conjunction with any other materials or in any process, unless specified in the text.