Material Safety Data Sheet: RMA 3500R

1. Chemical Product and Company Information

Product ID: RMA 3500
Generic Description: Polyester solution
Product Use: Adhesive

2. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Common Name</th>
<th>CAS#</th>
<th>Appro % (w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,3-Dioxolane</td>
<td>646-06-0</td>
<td>83.0</td>
</tr>
<tr>
<td>Non-hazardous and other ingredients</td>
<td>Proprietary</td>
<td>Balance</td>
</tr>
</tbody>
</table>

3. Hazards Identification

EMERGENCY OVERVIEW: FLAMMABLE LIQUID AND VAPOR. INHALATION MAY CAUSE DIZZINESS, HEADACHE AND INCOORDINATION. MAY CAUSE DIGESTIVE TRACT IRRITATION. INHALATION MAY CAUSE NAUSEA, VOMITING, UPSET STOMACH. MAY CAUSE SKIN IRRITATION. See sections 3, 5 & 6.

PRIMARY ROUTS OF EXPOSURE: Eye, Skin, Inhalation (breathing)
EYE CONTACT: May cause moderate irritation. Can cause burning sensation, tearing, and redness.
SKIN CONTACT: May cause slight to mild irritation.
INHALATION (Breathing): Irritating to the eyes, nose, and respiratory tract. Can cause dizziness, headaches and INCOORDINATION. Nausea, vomiting and stomach upset can occur.
INGESTION (Swallowing): Irritating to the mouth, throat and stomach.
TARGET ORGANS/CHRONIC EFFECTS: Lungs and respiratory system, Eyes.
CONDITIONS AGGRAVATED BY EXPOSURE: Exposure to this product is not expected to contribute, worsen or aggravate any pre-existing medical conditions.
CARCINOGENICITY:

<table>
<thead>
<tr>
<th></th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,3 - Dioxolane</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

4. First Aid Measures

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get prompt medical attention.
SKIN CONTACT: Immediately flush with water. Remove contaminated clothing and shoes. Get medical attention if irritation persists. Professionally wash clothing and shoes before re-use.
INHALATION (Breathing): Remove to fresh air. If symptoms develop, seek immediate medical attention. If not breathing, give artificial respiration.
INGESTION (Swallowing): Seek medical attention. Immediately induce vomiting, as directed by medical personnel. Never give anything by mouth to an unconscious person.
NOTES TO PHYSICIANS: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

5. Fire Fighting Methods

Flash Point: 25°F (-3.8°C)
Method: Setalight Closed Cup
Autoignition: Not Determined
Exposure Limits: LEL (%) Not Determined  UEL (%) Not Determined

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Smoke, soot and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide and etc.).
FIRE AND EXPLOSION HAZARDS: High temperatures can cause sealed containers to rupture due to a build up of internal pressure. Cool with water. Vapors can travel to a source of ignition (flame, electric motor, hot surface, cigarette and etc.) and flash back. During a fire, irritating and highly toxic gases may be generated during combustion or decomposition.
EXTINGUISHING MEDIA: SMALL FIRES: Dry chemical, carbon dioxide, halon, water spray or foam. Large Fire: Water spray, fog or alcohol foam.
FIRE FIGHTING PROCEDURES/EQUIPMENT: Fire fighters and other who may be exposed to the products of combustion should be equipped with NIOSH-approved positive pressure self-contained breathing apparatus (SCBA) and full protective clothing.

6. Accidental Release Measures
EVACUATION: Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Eliminate all sources of ignition.
CONTAINMENT: Safely stop discharge. Contain material, as necessary, with a dike or barrier. Stop material from contaminating soil, or from entering sewer or bodies of water.
CLEAN-UP/PERSONAL PROTECTION EQUIPMENT: Appropriate safety measures and protective equipment should be used.
COLLECTION AND DISPOSAL: Stop discharge, if safe to do so. Use proper protective equipment. Use non-sparking tools and/or explosion-proof equipment. Stop ignition sources. Cover spills with absorbent clay or sawdust and place in closed chemical waste containers. Dispose of according to applicable local, state and federal regulations.
REPORTING: Spills of this material in excess of a component’s RQ must be reported to the National Response Center (1-800-424-8802) and to the appropriate state and local emergency response organizations. No regulated ingredients.

7 Handling and Storage
STORAGE CONDITIONS: Store in cool, dry, well ventilated area away from heat, ignition sources, and direct sunlight. Keep containers tightly closed.
WARNING: Hot organic chemical vapors or mists can suddenly and without warning combust when mixed with air. Ignition can occur at typical elevated temperature process conditions. Any use in such processes should be evaluated thoroughly to assure safe operating conditions.
TRANSFER: Containers should be supported and grounded before opening, dispensing, mixing, pouring and emptying. Open with non-sparking tools. If container is warm, open bung slowly to release internal pressure.
PERSONAL HYGIENE: Wash thoroughly after handling, especially before eating, drinking, smoking and using the restroom. Wash contaminated goggles faceshield and gloves. Professionally launder contaminated clothing before re-use.
EMPTY CONTAINER PRECAUTIONS: Attention! This container hazardous when empty. Follow label warnings even after container is emptied since empty containers may retain product residue. Do not heat, sparks, open flames, torches, cigarettes on or near empty container. Do not reuse empty container without professional cleaning for food, clothing or products for human or animal consumption of where skin contact can occur.

8. Exposure Controls/Personal Protection
EXPOSURE GUIDELINES:
ACGIH – TLV 1.3 Dioxolane 20ppm.
OSHA - PEL - No regulated ingredients.
ENGINEERING CONTROLS/VENTILATION: Local exhaust ventilation is recommended when vapors, mists or dust can be released.
EYE PROTECTION: Wear chemical splash goggles. An eye wash facility should be readily available.
SKIN PROTECTION: Wear protective clothing and appropriate impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for a specific operation.
RESPIRATORY PROTECTION: Avoid breathing vapor and/or mists. Wear NIOSH/MSHA - approved equipment. Determine the appropriate type by consulting the respirator manufacturer. High airborne concentrations may necessitate the use of self-contained breathing apparatus (SCBA) or a supplied air respirator. Respiratory protection programs must be in compliance with 29CFR1910.134.

9. Physical and Chemical Properties
APPEARANCE: Yellow
PHYSICAL STATE: Liquid
pH: Not Applicable
SPECIFIC GRAVITY: 1.09
ODOR: Solvent
SOLUBILITY: Slightly soluble
VOC MATERIAL: 910 g/L 7.6 lbs/gal
MATERIAL: Solvent
%NON-VOL (W/W): 17

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. Stability and Reactivity
CHEMICAL STABILITY: Stable under normal conditions of use.
HAZARDOUS POLYMERIZATION: Will not occur.
CONDITIONS TO AVOID: High temperatures
INCOMPATIBILITY WITH OTHER MATERIAL: Oxidizers

11. Toxicity Information
COMPONENTS:
1,3-Dioxolane:
Eye, skin and respiratory tract irritant.
Oral LD50 Rat 3,000 mg/kg
Mouse 3,200 mg/kg
Dermal LD50 Rabbit 8,480 mg/kg
Inhalation LC50 Rat 20,650 ppm/4-hours

12. Ecological Information
No data are available on this product

13. Disposal Considerations
DISPOSAL: When a decision is made to discard this material as supplied, it meets RCRA’s characteristic definition of ignitability.
GENERAL STATEMENTS: Federal regulations may apply to empty container. State and/or local regulations may be different.
GENERAL RECOMMENDATIONS: Of the methods of disposal currently available, it is recommended that an alternative be selective according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.
SPECIAL INSTRUCTIONS: Be sure to contact the appropriate government environmental agencies if further guidance is required.

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14. Transportation Information

<table>
<thead>
<tr>
<th>Weight (lb)</th>
<th>Shipping Name</th>
<th>49 CFR</th>
<th>IATA</th>
<th>IMO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dioxolane solution</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

DOT Label: Flammable Liquid
DOT Label No: L152
Hazard Class: 3 (IATA/49CFR) 3.2 (IMO)
Packing Group: II
WHMIS Label: F152

15. Regulatory Information

FEDERAL: This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200)
SARA Title III - Section 311/312 - Hazard Categories:
- Y - Fire Hazard
- N - Sudden Release of Pressure Hazard
- N - Reactivity Hazard
- Y - Immediate (acute) Health Hazard
- Y - Delayed (chronic) Health Hazard

Ozone-Depleting Chemicals - No regulated ingredients
SARA Section 302 Extremely Hazardous Mat - No regulated ingredients
SARA Section 313 Toxic Chemicals: 1,3-Dioxolane

CHEMICAL LISTING: Listed on the following Country’s Chemical Inventories:
United States Toxic Substance Control Act: Chemical components in this product are on the section 8(b) Chemical Substance Inventory List (40 CFR 710)

STATE RIGHT-TO-KNOW:
Pennsylvania - New Jersey R-T-K
1,3-Dioxolane 646-06-0 83.0
Non-hazardous trade secret ingredient(s) Proprietary Balance
California - California Proposition 65
WARNING: This product contains a chemical(s) known to the State of California to cause cancer.
Antimony oxide 1309-64-4 Trace*
Cancer hazard *Trace = present at less than 0.01 percent.

CONEG - No data available

CANADA - This is a “controlled product” under the Canadian Workplace Hazardous Materials Information System (WHMIS)
Class B Division 2 Class D Division 2 Sub-division B

CEPE - NPRI - No regulated ingredients.

16. Other Information

USER RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.