



MATERIAL SAFETY DATA SHEET

STAR MACRO-FLEX

Manufacturer: S.T.A.R., INC.
1150 Milepost Dr.
Columbus, OH 43228

Emergency Phone No. CHEM-TEL 800-255-3924
Information Phone No. 614-870-0744
Effective Date 3/25/02
Supersedes Date 10/10/94

SECTION I- IDENTIFICATION

Product Name:	STAR MACRO-FLEX, Reinforcing Latex Additive.		
Chemical Family -	Nitrile Emulsion Latex.	H.M.I.S.	
Chemical Name -	Acrylic polymer Emulsion	Health	= 1
Prepared by -	G.C. Dubey	Fire	= 0
		Reactivity	= 0
		Personal Protection	= B

SECTION II- INGREDIENTS

Ingredients	CAS NO.	Wt%	Exposure Limits	
			OSHA PEL/STEL	ACGIH TLV-TWA/STEL
<u>Hazardous Ingredients</u>				
Acrylonitrile	107-13-1	<0.005%	2 ppm(TWA)	2ppm(TWA)
Butadiene (2,9 end notes of page 4)	106-99-0	less than 50 ppm	2 ppm(TWA) 15 ppm (C) A2 Skin	10ppm(TWA)
Acrylamide (1,2,9,16 end notes on page 4)	79-06-1	less than 2500 ppm	0.03mg/m3 (skin)	0.03mg/m3 (skin)
Formaldehyde	50-00-0	less than 1000 ppm	0.75 ppm(TWA) 0.3 ppm (TWA)A2 2 ppm(STEL)	2 ppm(STEL)
N-Methylolacrylamide	924-42-4	approx. 7000 ppm	Not Estab.	Not Estab.
<u>Other Ingredients</u>				
Water	2-18-5	approx. 50%	Not Established	
Latex Polymer	Proprietary	approx. 50%	Not Established	

(endnotes 8 on page 5 for the above two items).

Notes

PEL = Permissible exposure Limit **STEL** = Short term exposure Limit **TLV** = Threshold Limit Value
TWA = Time weighted average **Skin** = Dermal contact contributes as a significant exposure route.
A2 = Suspected human carcinogen (ACGIH) **NA** = Not available or Not applicable.

Total weight percentage of all the listed ingredients could be below 100, indicating other unlisted ingredients that are not considered hazardous by any federal (OSHA, WHMIS, SARA), any state or province or local Right-To-Know regulations.

<u>SECTION III PHYSICAL DATA</u>

<u>Boiling Point</u>	<u>Vapor Pressure</u>	<u>Vapor density</u>	<u>Appearance</u>
212 °F	(mm Hg @ 20 °C) Approx. 17	(Air=1) 1	Milky liquid with mild rubber odor. Light blue color.
<u>Evaporation Rate</u> <u>(Water=1)</u>	<u>Specific Gravity</u>	<u>pH</u>	<u>Freezing Point</u>
1	1.00	6.00-7.00	32 °F / 0 °C
<u>Miscibility</u>	<u>Threshold Odor</u>	<u>Water/Oil Dist. Coeff.</u>	
Dilutable with water	(ppm) –N/A	N/A	

<u>SECTION IV FIRE AND EXPLOSION HAZARD DATA</u>

<u>Flammability Classification</u>	<u>Flash Point</u>	<u>Flammable Limits</u>
N/A	(method used) N/A	LEL UEL N/A N/A

<u>Combustion Products</u>	<u>Extinguishing Media</u>
CO, CO ₂ , Hydrocarbon Compounds, Oxides of Nitrogen.	Foam, Dry Chemical, CO ₂ , Water Spray.

Unusual Fire and Explosion Hazards: Containers may rupture due to steam pressure build-up. Product may splatter if the temperature exceeds the boiling point of water. If solids ignite, toxic and irritating gases will be emitted.

Special Fire Fighting Procedures: Cool exposed containers to prevent steam pressure build-up. Wear self-contained breathing equipment.

<u>Explosive Power</u>	<u>Burning Rate</u>	
N/A	N/A	
<u>UN/NA/PIN #</u>	<u>Static Sensitive</u>	<u>Impact Sensitive</u>
Not Established	NO	NO

SECTION V- HEALTH HAZARD DATA

Threshold Limit Value - Not Established.
Routes Of Entry - Skin, eyes, inhalation, ingestion.
Effects Of Overexposure - **Acute:** YES **Chronic:** YES

Eyes - May cause eye irritation.

Skin - May cause irritation. Acrylamide (ACMD) and N-Methylolacrylamide (NMA) are readily absorbed through contact with skin and can cause injury to the nervous system.

Inhalation - May cause headaches and nausea. Vapors can irritate respiratory tract.

Ingestion - May cause nausea, cramps, vomiting, diarrhea or acute effects.

Conditions Aggravated By Exposure: None specific to this product. People with sensitive airways (e.g. asthmatics) may react to airborne vapors. Persons with pre-existing skin problem may be aggravated by contact with liquid product.

Carcinogenic: IARC- NO AGIH- NO NTP- NO See appendix A-E.

Emergency and First Aid Procedures

Eyes- Immediately flush with plenty of water for 15 minutes, call a physician, if condition persists.

Skin- Wash thoroughly with plenty of water and soap. Remove and wash contaminated clothing. Consult a doctor.

Inhalation- move to fresh air, administer oxygen and call a physician..

Ingestion- Dilute by drinking water or milk. Induce vomiting. Seek a physician immediately, show M.S.D.S. or label.

SECTION VI REACTIVITY DATA

<u>Stability</u>	<u>Conditions to Avoid</u>	<u>Incompatibility</u>
Stable	Keep from Freezing	(Materials to avoid) None special noted

Hazardous Decomposition Products - CO, CO₂, Oxides of Nitrogen, some aliphatic and aromatic hydrocarbons.

Hazardous Polymerization - Will not occur.

Conditions to Avoid - N/A

SECTION VII- SPILL OR LEAK PROCEDURES

SARA Title III

302 - NO

304 - NO

313 - Yes

RCRA - NO

Steps to be Taken in Case Material is Released or Spilled

Limit spread of leak or spill.

Ventilate the area.

Avoid falls as the floors may become slippery when the product is spilled.

Wear approved respiratory protection. Wear suitable protective clothing, gloves and eye / face protection.

Soak up with an inert absorbent material like sand or earth and pick up waste material. Put in a sealed approved container.

Keep material out of sewers, drains and bodies of water. Dispose of in accordance with federal, state, and local regulations.

The product is not considered a Hazardous waste under current federal RCRA requirements.

Reportable Quantity - N/A
Regulations - N/A
TPQ (Lb.) - N/A
Hazardous Waste - N/A

SECTION VIII SAFE HANDLING AND PROTECTION INFORMATION

Ventilation: Use local exhaust ventilation to control mists or vapors generated when using this product. Ventilation must be adequate to keep exposure below regulated limits.

Respiratory Protection: None required, normally. Appropriate respiratory protection should be selected by a qualified person if exposures are expected to be excessive.

Protective Gloves: Rubber gloves, chemically resistant.

Eye Protection: Wear safety glasses, goggles or face shield.

Other Protective Equipment: Wear suitable protective clothing.

Hygienic Practices: Wash hands before eating , smoking or using washrooms. Smoke only in designated areas.

Estimated LD 50, MG/KG: N/A

Estimated LC 50, PPM: N/A

Sensitization: N/A

Irritants: Yes

SECTION IX- SPECIAL PRECAUTIONS

1. Keep out of reach of children.
2. For professional and industrial use only.
3. Do not handle until manufacturer's safety precautions have been read and understood.
4. Use only with adequate ventilation.
5. Do not take internally.
6. Avoid contact with eyes and skin. Liquid penetrates leather and shoes causing delayed burns.
7. Wash thoroughly after using. Practice safe hygiene principles.
8. Additional Technical Data Sheets and/or M.S.D.S.'s are available upon request.
9. Store between 50-100 °F. Keep the containers tightly closed after each use.
10. Additional Technical data Sheets and /or M.S.D.S.'s are available upon request.

REGULATORY END NOTES

Refer to appropriate note found in Section, I: Ingredients

1. Exceeds the minimum amount for SARA Title III, section 313 and 40 CFR 372 annual release reporting requirements.
2. Ingredient listed on the California List of Substances known to cause cancer.
3. Ingredient listed on the California List of Substances to cause Reproductive Effects.
4. Product is subject to the PA worker and Community Right To Know Act.
5. A special Hazardous Substance above 0.01% THRESHOLD (PA).
6. A PA Hazardous Substance above the 1 % threshold.
7. A PA Non-Hazardous substance above 3 %.
8. A PA Non -Hazardous substance above 5 %.
9. A MA Extraordinary Hazardous substance above 1 mg/kg threshold.

10. A Ma Toxic or Hazardous Substance above the 1 % threshold.
11. A NJ Special Health Hazard Substance greater than 1.0 %.
12. A NJ Environmental Hazardous Substance greater than 0.1 %.
13. A NJ Non-Hazardous Substance less than 1 % but greater than 500 pounds. Additional information on non-hazardous ingredients is available.
14. SARA Title III requires emergency planning based on Threshold planning quantities and release reporting based on Reportable Quantities (Section 302, 304, 311, 312).
15. Ingredient exceeds the 1 % threshold in Canadian Work place Hazardous Materials Information System (WHMIS) Ingredients Disclosure List.
16. Ingredient exceeds the 0.1 % threshold in WHMIS Ingredients Disclosure List.
17. This substance is considered to be a "hazardous substance for the New York State Chemical Bulk Storage Regulations (6NYCRF595-597). Release reporting and tank registration may be required.
18. A proprietary ingredient which is not on Massachusetts substance List (MSL) and does not contain any MSL components.
19. A NJ work place Hazardous Substance greater than 1.0 %.

APPENDIX A ACRYLAMIDE

Acrylamide has been listed by IARC as a gp. 2B (possible human) carcinogen. This conclusion was based on studies with laboratory animals and limited human data. No significant amount of exposure is anticipated when good industrial hygiene practices are observed. The amount of residual acrylamide in this product is above the amount requiring annual release reporting under federal EPA regulations (SARA section 313).

APPENDIX B ACRYLONITRILE

Acrylonitrile has been listed by the NTP, IARC, and OSHA as a human carcinogen. The OSHA regulation covering worker exposure to AN (1910.1045) requires labeling of materials if the product is capable of releasing enough AN under normal conditions of processing and use, to cause airborne concentrations to exceed 1 ppm. Data developed using manufacturer's latexes has shown that when the residual AN is under 100 mg/kg in the wet latex, airborne concentrations are not expected to exceed 1 ppm. Users should not rely solely on this data to establish compliance with Acrylonitrile Standard, but should conduct their own exposure evaluations.

APPENDIX C BUTADIENE

Butadiene has been listed by IARC as a gp. 2B (possible human) carcinogen. This conclusion was based on studies with laboratory animals and limited human data. No significant amount of exposure to butadiene is anticipated when good industrial hygiene practices are observed. The amount of Butadiene in this product is well below the amount requiring annual release reporting under federal OSHA or EPA regulations.

APPENDIX D FORMALDEHYDE

Formaldehyde has been listed by the NTP, IARC and OSHA as a possible human carcinogen. This conclusion was based on studies with laboratory animals exposed to airborne formaldehyde at levels above current exposure limits.

No significant amount of exposure is anticipated when good industrial hygiene practices are observed. Experiments conducted by emulsion manufacturer to try to simulate latex handling have shown that concentrations of formaldehyde in wet latex were below 1 ppm (current OSHA, PEL) when concentration of Formaldehyde in wet latex were below 2300 mg/kg (0.23%). Users should not solely rely on this data to establish compliance with OSHA Formaldehyde Standards (29CFR1910.1048) but should conduct their

own exposure evaluations.

APPENDIX E N-METHYLOLACRYLAMIDE (NMA)

NMA has been studied in toxicology tests sponsored by the National Toxicology Program. Effects on the nervous system (Neurotoxicity) were observed in mice and rats of both sexes in a 13 week sub chronic study. In addition, a lifetime feeding study using both species showed an increased incidence of tumors among mice in both exposure groups (25 and 50 mg/kg/day). There was no increased incidence of tumors among rats even at highest dose (12 mg/kg/day).

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