

MATERIAL SAFETY DATA SHEET

DATE ISSUED :	1/10/2012
MSDS REF. No :	56032-5

A-A-56032 Type I, Type II & Type III

1. PRODUCT AND COMPANY INFORMATION

PRODUCT NAME: Ink Marking, Epoxy Base. **Base Component**
Colors: Brown, Orange, Orange 22510, Green, Green 24190, Green 34088, Green 34108, Yellow, Yellow 13655, Yellow 23655, Yellow 33538

MANUFACTURER INFORMATION

MACH-DYNAMICS
494 Main Street
Susquehanna, PA 18847
Phone: (775) 278-9308
Fax: (775) 599-4585
Contact : Mark Gingerella

24 HR. EMERGENCY TELEPHONE NUMBER

(US Transportation): +1 (800) 392-7701
(International Transportation): +001 (800) 392-7701

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE : Liquid

As noted in the preface to published values adopted by the ACGIH TLV's represent "conditions under which it is believed that nearly all workers may be repeatedly exposed day after day without adverse effect. Because of wide variation in individual susceptibility however, a small percentage of workers may experience discomfort from some substances at concentrations at or below the threshold limit, a smaller percentage may be affected more seriously by aggravation of pre-existing condition or by development of occupational illness".

POTENTIAL HEALTH EFFECTS

EYES : Moderately irritating or other symptoms (redness, blurred vision, etc.) persisting more than seven days with reversible corneal opacity.

SKIN : Slightly irritating. Prolonged or widespread contact may lead to defatting or dermatitis.

INGESTION : Slightly irritating to gastrointestinal tract. Can cause headache, diarrhea, drowsiness, breathing difficulties, nausea, vomiting.

INHALATION : Slightly irritating to nasal respiratory tracts. Can cause headache, drowsiness, dizziness, breathing difficulties, nausea.

CHRONIC : No chronic health concerns known.

CARCINOGENICITY : This material is not currently known to have carcinogenic properties.

MUTAGENICITY : This material is not known to have mutagenic effects on genetic material.

IRRITANCY: This material may cause irritation to the eyes, skin, and respiratory tract. Use correct PPE when handling this material.

REPRODUCTIVE TOXICITY

REPRODUCTIVE EFFECTS : This material is not known to cause any reproductive system damage.

TERATOGENIC EFFECTS : This material is not known to contain any teratogenic substances.

3. COMPOSITION/CHEMICAL INFORMATION

Chemical Name	CAS Number	Weight %	OSHA PEL	ACGIH TLV
Lead Chromate Pigment	7758-97-6	5-10	0.5mg/m ³ - Pb .1mg/m ³ - CrO ₃	0.5mg/m ³ - Pb .01mg/m ³ - Cr
NJTSRN: 6050YEL				

* Toxic chemical subject to the reporting requirements of section 313 of Title III and of 40 CFR 372.

4. FIRST AID MEASURES

EYES : Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Seek medical aid if irritation persists.

SKIN : Flush skin with soap and water while removing contaminated clothing. If irritation occurs, seek immediate medical attention. Do not reuse clothing or shoes until thoroughly cleaned.

INGESTION : Current available information does not contraindicate induction of vomiting. Induce vomiting if conscious, as directed by medical personnel. Seek medical attention.

INHALATION : Immediately remove victim to fresh air. If victim is not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Seek immediate medical attention.

5. FIRE FIGHTING MEASURES

FLASH POINT AND METHOD : >240 degrees Fahrenheit Tagliabue Closed Cup (TCC)

FLAMMABLE LIMITS : LEL: Unknown UEL: Unknown
LEL value reported is lowest listed for any ingredient in mixture.

AUTOIGNITION TEMPERATURE : No data available.

EXTINGUISHING MEDIA : Use water fog, multipurpose foam, dry chemical, or CO₂.

FIRE FIGHTING PROCEDURES : Fight as volatile liquid fire.

6. ACCIDENTAL RELEASE MEASURES

GENERAL PROCEDURES : SPILL or LEAK PROCEDURES: Secure area and remove all sources of ignition and heat. Prevent additional discharge of material. Absorb small spills with sand, filter-aid, vermiculite or other inert absorbent material. For large spills, prevent material from entering sewers and or water courses. Contain spill with sand, or earth dikes. Recover as much as possible by pumping. Treat remainder as small spill. Dispose of waste in accordance with applicable government regulations. Wear chemical goggles, gloves, boots, and protective clothing. Wear respirator if necessary.

ENVIRONMENTAL PRECAUTIONS

WATER SPILL : Keep material out of storm sewers and ditches which lead to waterways.

LAND SPILL : Contact applicable authorities and determine applicable regulations based on MSDS information.

AIR RELEASE : Contact applicable authorities and determine applicable regulations based on MSDS information.

7. HANDLING AND STORAGE

STORAGE TEMPERATURE: 40 - 90°F

SHELF LIFE: Recommended use within 12 months. Refrigeration will extend shelf life.

HANDLING AND STORAGE PRECAUTIONS: Store in tightly closed properly vented container away from heat, sparks, open flame, or strong oxidizing agents. Containers must be properly grounded and adequate ventilation provided. Unscrew all caps slowly. Do not unscrew entirely until all pressure has been completely released.

REPAIR & MAINTENANCE OF CONTAMINATED EQUIPMENT: Handle all equipment containing liquid mixture as reported on this MSDS. Equipment with "dried mixture" must be handled with the same care as other dried organic coatings. All cleaning material should be handled according to their instructions and their MSDS.

COMMENTS : KEEP OUT OF REACH OF CHILDREN! Empty containers retain product residue and can be dangerous. Do not pressurize, cut weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks static electricity, or other sources of ignition.

SPECIAL PRECAUTIONS: None

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES :

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)

CHEMICAL NAME	EXPOSURE LIMITS				
		OSHA PEL		ACGIH TLV	
		ppm	mg/m ₃	ppm	mg/m ₃
NJTSRN: 6050YEL	TWA				
	STEL				

OSHA TABLE COMMENTS:

NL = Not Listed

Ca = "WARNING: THIS PRODUCT CONTAINS CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM."

ENGINEERING CONTROLS: Provide exhaust ventilation sufficient to keep the airborne concentration of this product below its exposure limits. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Use chemical safety goggles and/or full face shield where splashing is possible. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work areas.

SKIN: Wear resistant gloves (consult your safety equipment supplier). To prevent repeated or prolonged skin contact, wear impervious clothing and boots.

RESPIRATORY: If exposure may or does exceed occupational exposure limits (Section 8) use a NIOSH approved respirator to prevent overexposure. In accord with 29 CFR 1910.134, use either an atmosphere-supplying respirator or an air-purifying respirator for organic vapors.

HYGIENIC WORK PRACTICES: Use good personal hygiene when handling this product. Wash hands after use, before eating, drinking, smoking, or using the toilet.

OTHER USE PRECAUTIONS: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE : Liquid

ODOR : Mild

pH : Not Applicable

BOILING POINT : >400 Degrees Fahrenheit

FREEZING POINT : No data available

VOLATILE ORGANIC COMPOUNDS:

(VOC Theoretical – As Packaged)

% VOLATILE BY VOLUME: approx. 20

SOLUBILITY IN WATER : Moderate

EVAPORATION RATE (nBuAcet=1): <0.01

VAPOR DENSITY (AIR=1): approx. 5.6

SPECIFIC GRAVITY (water=1): 1.20

VAPOR PRESSURE (mm Hg): <0.1

10. STABILITY AND REACTIVITY

STABLE : Yes

HAZARDOUS POLYMERIZATION : Will not occur

CONDITIONS TO AVOID : Strong oxidizing agents, strong acids, strong bases, alkali metals, halogens.

HAZARDOUS DECOMPOSITION PRODUCTS: CO, CO₂, Organic Combustion Products, Oxides of Nitrogen, metal Oxide fumes.

INCOMPATIBLE MATERIALS : Strong oxidizing agents, strong acids, strong bases, alkali metals, halogens.

11. TOXICOLOGICAL INFORMATION

GENERAL COMMENTS: None identified.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: Keep out of waterways.

13. DISPOSAL INFORMATION

DISPOSAL METHOD: Any disposal practice must be in compliance with federal, state, and local regulations. Do not dump into sewers, ground, or any body of water.

EMPTY CONTAINER: KEEP OUT OF REACH OF CHILDREN! Empty containers retain product residue and can be dangerous. Do not pressurize, cut weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks static electricity, or other sources of ignition.

RCRA/EPA WASTE INFORMATION: Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

PROPER SHIPPING NAME : Not Regulated.

(UN#, Proper Shipping Name, Class, Packing Group)

*** MACH-DYNAMICS verifies that the material was supplied and shipped in the proper packages in accordance with DOT and federal regulations that are applicable to the mode of transportation selected. The shipper must verify that the packaging supplied is acceptable to be re-shipped in per the federal regulations applicable to the mode of transportation for re-shipment. Regulations may change depending on mode of transportation selected.***

15. REGULATORY INFORMATION

Chemical Name: Mixture

Formula: Proprietary Mixture

TSCA STATUS: Listed

Ingredient(s)	SARA 302	SARA 313	RECRA	PROP 65
Lead Chromate Pigment	No	Yes	No	Yes
NJSRN:6050YEL	No	No	No	No

313 REPORTABLE INGREDIENTS: To the best of our knowledge, this product is not listed as a toxic chemical.

302/304 EMERGENCY PLANNING

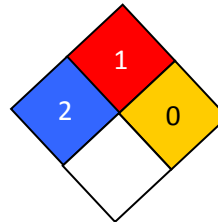
EMERGENCY PLAN: To the best of our knowledge, this material is not listed as an extremely hazardous substance.

16. OTHER INFORMATION

APPROVED BY : Mark Gingerella

TITLE : President / QC Manager

NFPA CODES



HMIS RATING	
Health :	2
Flammability :	1
Reactivity :	0
Personal Protection :	G

MANUFACTURER DISCLAIMER : The information contained herein is based on the data available to us and is believed to be accurate. However, MACH-DYNAMICS makes no warranty, expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof. MACH-DYNAMICS assumes no responsibility for injuries from the use of the product described herein.

MATERIAL SAFETY DATA SHEET

DATE ISSUED :	1/10/2012
MSDS REF. No :	56032-6

A-A-56032 Type I, Type II & Type III

1. PRODUCT AND COMPANY INFORMATION

PRODUCT NAME: Ink Marking, Epoxy Base. **Catalyst Component**

Colors: Brown, Orange, Orange 22510, Green, Green 24190, Green 34088, Green 34108, Yellow, Yellow 13655, Yellow 23655, Yellow 33538

MANUFACTURER INFORMATION

MACH-DYNAMICS

494 Main Street

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2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE : Liquid

As noted in the preface to published values adopted by the ACGIH TLV's represent "conditions under which it is believed that nearly all workers may be repeatedly exposed day after day without adverse effect. Because of wide variation in individual susceptibility however, a small percentage of workers may experience discomfort from some substances at concentrations at or below the threshold limit, a smaller percentage may be affected more seriously by aggravation of pre-existing condition or by development of occupational illness".

POTENTIAL HEALTH EFFECTS

EYES : May be corrosive to eyes and cause severe damage, including blindness. Vapors may also be irritating to eyes.

SKIN : Moderately irritating. Sensitizer. Prolonged or widespread contact may lead to irritation, defatting, or dermatitis; absorption may lead to headache, drowsiness, nausea, breathing difficulties.

INGESTION : Moderately irritating to gastrointestinal tract. Can cause headache, diarrhea, drowsiness, breathing difficulties, nausea, vomiting.

INHALATION : Moderately irritating to nasal respiratory tracts. Can cause headache, drowsiness, dizziness, breathing difficulties, nausea, unconsciousness.

CHRONIC : No chronic health concerns known.

CARCINOGENICITY : This material is not currently known to have carcinogenic properties.

MUTAGENICITY : This material is not known to have mutagenic effects on genetic material.

IRRITANCY: This material may cause irritation to the eyes, skin, and respiratory tract. Use correct PPE when handling this material.

REPRODUCTIVE TOXICITY

REPRODUCTIVE EFFECTS : This material is not known to cause any reproductive system damage.

TERATOGENIC EFFECTS : This material is not known to contain any teratogenic substances.

3. COMPOSITION/CHEMICAL INFORMATION

Chemical Name	CAS Number	Weight %	OSHA PEL	ACGIH TLV
n-Butyl Alcohol	71-36-3	5-15	50 ppm skin	20ppm
Toluene	108-88-3	2-5	200 ppm	50ppm skin
Glycol Ether PM	107-98-2	2-5	100ppm	100ppm
NJSRN: 6050YELCAT				
Lead Chromate Pigment	7758-97-6	5-10	.05mg/m ³ - Pb .1mg/m ³ - CrO ₃	.05mg/m ³ - Pb .01mg/m ³ - Cr

* Toxic chemical subject to the reporting requirements of section 313 of Title III and of 40 CFR 372.

4. FIRST AID MEASURES

EYES : Immediately flush eyes with plenty of water for at least 15 minutes or until medical personnel indicate to stop, while holding eyelids open. Seek medical aid if irritation persists.

SKIN : Flush skin with soap and water while removing contaminated clothing. If irritation occurs, seek immediate medical attention. Do not reuse clothing or shoes until thoroughly cleaned.

INGESTION : DO NOT induce vomiting. Aspiration of material can cause chemical pneumonitis, which can be fatal. Seek medical attention.

INHALATION : Immediately remove victim to fresh air. If victim is not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Seek immediate medical attention.

5. FIRE FIGHTING MEASURES

FLASH POINT AND METHOD : 105 degrees Fahrenheit Tagliabue Closed Cup (TCC)

FLAMMABLE LIMITS : LEL: Unknown UEL: Unknown
LEL value reported is lowest listed for any ingredient in mixture.

AUTOIGNITION TEMPERATURE : No data available.

EXTINGUISHING MEDIA : Use water fog, multipurpose foam, dry chemical, or CO2.

FIRE FIGHTING PROCEDURES : Fight as volatile liquid fire.

6. ACCIDENTAL RELEASE MEASURES

GENERAL PROCEDURES : SPILL or LEAK PROCEDURES: Secure area and remove all sources of ignition and heat. Prevent additional discharge of material. Absorb small spills with sand, filter-aid, vermiculite or other inert absorbent material. For large spills, prevent material from entering sewers and or water courses. Contain spill with sand, or earth dikes. Recover as much as possible by pumping. Treat remainder as small spill. Dispose of waste in accordance with applicable government regulations. Wear chemical goggles, gloves, boots, and protective clothing. Wear respirator if necessary.

ENVIRONMENTAL PRECAUTIONS

WATER SPILL : Keep material out of storm sewers and ditches which lead to waterways.

LAND SPILL : Contact applicable authorities and determine applicable regulations based on MSDS information.

AIR RELEASE : Contact applicable authorities and determine applicable regulations based on MSDS information.

7. HANDLING AND STORAGE

STORAGE TEMPERATURE: 40 - 90°F

SHELF LIFE: Recommended use within 12 months. Refrigeration will extend shelf life.

HANDLING AND STORAGE PRECAUTIONS: Store in tightly closed properly vented container away from heat, sparks, open flame, or strong oxidizing agents. Containers must be properly grounded and adequate ventilation provided. Unscrew all caps slowly. Do not unscrew entirely until all pressure has been completely released.

REPAIR & MAINTENANCE OF CONTAMINATED EQUIPMENT: Handle all equipment containing liquid mixture as reported on this MSDS. Equipment with "dried mixture" must be handled with the same care as other dried organic coatings. All cleaning material should be handled according to their instructions and their MSDS.

COMMENTS : KEEP OUT OF REACH OF CHILDREN! Empty containers retain product residue and can be dangerous. Do not pressurize, cut weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks static electricity, or other sources of ignition.

SPECIAL PRECAUTIONS: None

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES :

ENGINEERING CONTROLS: Provide exhaust ventilation sufficient to keep the airborne concentration of this product below its exposure limits. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Use chemical safety goggles and/or full face shield where splashing is possible. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work areas.

SKIN: Wear resistant gloves (consult your safety equipment supplier). To prevent repeated or prolonged skin contact, wear impervious clothing and boots.

RESPIRATORY: If exposure may or does exceed occupational exposure limits (Section 8) use a NIOSH approved respirator to prevent overexposure. In accord with 29 CFR 1910.134, use either an atmosphere-supplying respirator or an air-purifying respirator for organic vapors.

HYGIENIC WORK PRACTICES: Use good personal hygiene when handling this product. Wash hands after use, before eating, drinking, smoking, or using the toilet.

OTHER USE PRECAUTIONS: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE : Liquid

ODOR : Characteristic

pH : Not Applicable

BOILING POINT : Not Determined

FREEZING POINT : No data available

VOLATILE ORGANIC COMPOUNDS:
(VOC Theoretical – As Packaged)

% VOLATILE BY VOLUME: approx. 15

SOLUBILITY IN WATER : Moderate

EVAPORATION RATE (nBuAcet=1): <1

VAPOR DENSITY (AIR=1): >1

SPECIFIC GRAVITY (water=1): 1.20

VAPOR PRESSURE (mm Hg): Not determined

10. STABILITY AND REACTIVITY

STABLE : Yes

HAZARDOUS POLYMERIZATION : Will not occur

CONDITIONS TO AVOID : Strong oxidizing agents, strong acids, strong bases, alkali metals, halogens.

HAZARDOUS DECOMPOSITION PRODUCTS: CO, CO₂, Organic Combustion Products, Oxides of Nitrogen, Metal Oxide fumes.

INCOMPATIBLE MATERIALS : Strong oxidizing agents, strong acids, strong bases, alkali metals, halogens.

11. TOXICOLOGICAL INFORMATION

GENERAL COMMENTS: None identified.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: Keep out of waterways.

13. DISPOSAL INFORMATION

DISPOSAL METHOD: Any disposal practice must be in compliance with federal, state, and local regulations. Do not dump into sewers, ground, or any body of water.

EMPTY CONTAINER: KEEP OUT OF REACH OF CHILDREN! Empty containers retain product residue and can be dangerous. Do not pressurize, cut weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks static electricity, or other sources of ignition.

RCRA/EPA WASTE INFORMATION: Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

PROPER SHIPPING NAME : UN1210, Printing Ink, Class 3, Pkg. Grp. III.
(UN#, Proper Shipping Name, Class, Packing Group)

*** MACH-DYNAMICS verifies that the material was supplied and shipped in the proper packages in accordance with DOT and federal regulations that are applicable to the mode of transportation selected. The shipper must verify that the packaging supplied is acceptable to be re-shipped in per the federal regulations applicable to the mode of transportation for re-shipment. Regulations may change depending on mode of transportation selected.***

15. REGULATORY INFORMATION

Chemical Name: Mixture

Formula: Proprietary Mixture

TSCA STATUS: Listed

Ingredient(s)	SARA 302	SARA 313	RECRA	PROP 65
n-Butyl Alcohol	No	Yes	U031	No
Toluene	No	Yes	U220	Yes
Glycol Ether PM	No	No	No	No
Lead Chromate Pigment	No	Yes	No	Yes
NJTSRN:6050YELCAT	No	No	No	No

313 REPORTABLE INGREDIENTS: To the best of our knowledge, this product is not listed as a toxic chemical.

302/304 EMERGENCY PLANNING

EMERGENCY PLAN: To the best of our knowledge, this material is not listed as an extremely hazardous substance.

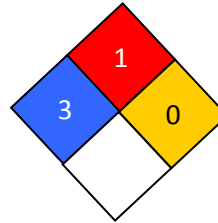
16. OTHER INFORMATION

APPROVED BY : Mark Gingerella

TITLE : President / QC Manager

HMIS RATING	
Health :	3
Flammability :	1
Reactivity :	0
Personal Protection :	G

NFPA CODES



MANUFACTURER DISCLAIMER : The information contained herein is based on the data available to us and is believed to be accurate. However, MACH-DYNAMICS makes no warranty, expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof. MACH-DYNAMICS assumes no responsibility for injuries from the use of the product described herein.