

# MATERIAL SAFETY DATA SHEET

NANO-Res

MSDS DATE: 03 /25 / 2009

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## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

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PRODUCT NAME: NANO-Res

PRODUCT CODES: NANO1

MANUFACTURER: Acsys Orthopedic  
ADDRESS: 2591 Pioneer Ave Vista, CA. 92081

EMERGENCY PHONE: 760-598-8191  
CHEMTREC PHONE: 800-424-9300

PRODUCT USE: Laminating Resin

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## SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

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INGREDIENT	CAS NO.	% WT
Styrene	000100-42-5	35%
Epoxy Acrylate resin	036425-15-7	40-70%
Monomers	See Index	2-15%
Trade secret component		.5-8%

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## SECTION 3: HAZARDS IDENTIFICATION

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### POTENTIAL HEALTH EFFECTS

**EYES:** May cause irritation. May cause slight corneal injury. Vapors may irritate eyes

**SKIN:** Prolonged exposure may cause skin irritation. Repeated exposure may cause skin burns. A single prolonged exposure is not likely to result in the material being absorbed through the skin in harmful amounts.

**INGESTION:** Single dose oral toxicity is considered to be low. If aspirated, may be rapidly absorbed through the lungs and result in injury to other body systems.

**INHALATION:** Excessive vapor concentrations are attainable and could be hazardous on single exposure. Signs and symptoms of excessive exposure may be anesthetic or narcotic effects. Excessive exposure may cause irritation to upper respiratory tract.

**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:** This material or its emissions may induce an allergic or sensitization reaction and thereby aggravate systemic disease.

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### CARCINOGENICITY Based on Styrene

OSHA:	NTP:	IARC:
NR	NR	Yes

NR= Not Reviewed

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## SECTION 4: FIRST AID MEASURES

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MSDS DATE: 03 /25 / 2009

**EYES:** Irrigate with flowing water immediately and continuously for 15 minutes. Consult medical personnel.

**SKIN:** Wash of in flowing water or shower.

**INGESTION:** Do not induce vomiting. Call a physician and/or transport to emergency facility immediately.

**INHALATION:** Remove to fresh air. If not breathing, give artificial respiration. IF breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

**NOTES TO PHYSICIANS OR FIRST AID PROVIDERS:** If burn is present, treat as any thermal burn, after decontamination. Because rapid absorption may occur through lungs if aspirated and cause systemic effects, the decision of whether to induce vomiting or not should be made by a physician. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach.

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## SECTION 5: FIRE-FIGHTING MEASURES

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**FLAMMABLE LIMITS IN AIR, UPPER:** 6.8 %  
(% BY VOLUME)                      **LOWER:** 0.9%

**FLASH POINT:**

F: 74-84

C: 31 (c.c)

**METHOD USED:** astm-d93

**AUTOIGNITION TEMPERATURE:**

F: 914

C: 490 based on styrene

**NFPA HAZARD CLASSIFICATION**

HEALTH: 2

FLAMMABILITY: 3

REACTIVITY: 2

PERSONAL PROTECTION G

**EXTINGUISHING MEDIA:** Water fog or fine spray, carbon dioxide, dry chemical, foam. Do not use direct water stream.

**SPECIAL FIRE FIGHTING PROCEDURES:** Wear positive- pressure self-contained breathing apparatus and protective fire fighting clothing. If protective equipment is not available or not used, fight fire from a protected location or safe distance.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Under fire conditions polymers decompose. The smoke may contain polymer fragments of varying compositions in addition to unidentified toxic and/or irritating compounds. Hazardous combustion products may include and are not limited to carbon dioxide, carbon monoxide

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## SECTION 6: ACCIDENTAL RELEASE MEASURES

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**ACCIDENTAL RELEASE MEASURES:** Do not breathe vapors. Vapor explosion hazard, keep out of sewers, eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Ground and bond all containers and handling equipment.

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## SECTION 7: HANDLING AND STORAGE

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**HANDLING AND STORAGE:** Containers, even those that have been emptied, can contain vapors. Do not cut, drill, weld, or perform similar operations on or near empty containers. No smoking, open flames or sources of ignition in handling or storage area. Store below 75F, avoid storage in direct sunlight. Minimize sources of ignition, such as static build up, heat, spark or flame.

**OTHER PRECAUTIONS:** Keep containers tightly closed when not in use.

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## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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**ENGINEERING CONTROLS:** Provide general and/or local exhaust ventilation to control airborne concentrations below the exposure guideline.

**RESPIRATORY PROTECTION:** Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required, use an approved air purifying or positive-pressure supplied air respirator.

**EYE PROTECTION:** Use chemical goggles. If vapor exposure causes eye discomfort, use a full face respirator.

**SKIN PROTECTION:** Wear long sleeved, body covering clothing. Use gloves impervious to this material. Selection of specific items will depend on operation.

**OTHER PROTECTIVE CLOTHING OR EQUIPMENT:**

**WORK HYGIENIC PRACTICES:**

**EXPOSURE GUIDELINES:** Styrene, monomer: ACGIH TLV is 20ppm TWA, 40ppm STEL, skin. ACGIH classifies as A4. OSHA PEL is 50 ppm TWA, 100 ppm STEL.

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## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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**APPEARANCE:** Yellow viscous liquid.

**ODOR:** Pungent Odor

**PHYSICAL STATE:** Liquid

**BOILING POINT:**

F: 294

C: 146

**VAPOR PRESSURE (mmHg):** 7

@

F: 68

C: 20

**VAPOR DENSITY (AIR = 1):** 3.6

@

F: 68

C: 20

**SPECIFIC GRAVITY (H<sub>2</sub>O = 1):** 1.02-1.15

**SOLUBILITY IN WATER:** Insoluble

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## SECTION 10: STABILITY AND REACTIVITY

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STABLE

UNSTABLE

STABILITY:

X

CONDITIONS TO AVOID (STABILITY): Avoid temperatures above 120F (49C)

INCOMPATIBILITY (MATERIAL TO AVOID): Oxidizing material

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:

HAZARDOUS POLYMERIZATION: May occur.

CONDITIONS TO AVOID (POLYMERIZATION): Avoid contact with metal salts and peroxides. Avoid exposure to direct sunlight or temperatures above 120F (49C)

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## SECTION 11: TOXICOLOGICAL INFORMATION

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TOXICOLOGICAL INFORMATION: LD50 for skin absorption in rabbits is expected to be >2000 mg/kg. The oral LD50 for rats is expected to be >4000 mg/kg.

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## SECTION 12: ECOLOGICAL INFORMATION

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ECOLOGICAL INFORMATION: Based on information for styrene, bioconcentration potential is low. Potential for mobility in soil is low. Based on information for styrene material is readily biodegradable.

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## SECTION 13: DISPOSAL CONSIDERATIONS

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WASTE DISPOSAL METHOD: Do not dump into any sewers, on the ground or into any body of water. All disposal methods must be in compliance with all Federal, State and local laws. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.

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## SECTION 14: TRANSPORT INFORMATION

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### U.S. DEPARTMENT OF TRANSPORTATION

PROPER SHIPPING NAME: Resin Solution or Polyester Resin Kit when shipped with Benzoyl peroxide paste

HAZARD CLASS: 3

ID NUMBER: UN1866 or UN3269 in kit with Benzyl peroxide paste

PACKING GROUP: III

### WATER TRANSPORTATION

PROPER SHIPPING NAME: Resin Solution or Polyester Resin Kit when shipped with Benzoyl peroxide paste

HAZARD CLASS: 3

ID NUMBER: UN1866 or UN3269 in kit with Benzyl peroxide paste

PACKING GROUP: III

### AIR TRANSPORTATION

PROPER SHIPPING NAME: Resin Solution or Polyester Resin Kit when shipped with Benzoyl peroxide paste

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## SECTION 15: REGULATORY INFORMATION

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### U.S. FEDERAL REGULATIONS

TSCA (TOXIC SUBSTANCE CONTROL ACT):

CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT): Styrene ( 1000lbs)

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT):

311/312 HAZARD CATEGORIES:

An immediate health hazard

A delayed health hazard

A fire hazard

A reactive hazard

313 REPORTABLE INGREDIENTS: Styrene

### STATE REGULATIONS:

Styrene NJ1, NJ2,NJ3,PA1,PA3

Proposition 65 Warning: This product contains a chemical(s) known to the State of California to cause cancer.

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## SECTION 16: OTHER INFORMATION

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### INDEX:

0026098-37-3 0037347-86-7 0135108-89-3 0113060-15-4 0037999-57-8 0112945-52-5 0149717-53-3 0052453-94-8

0029350-58-1 0056083-99-9 0025101-03-5 0155122-62-6 0028516-30-5 0057863-48-6 0026588-55-6 0031472-46-5

0028516-30-5 0061224-63-3 0025215-73-9 0013048-33-4 0029350-58-1 0027342-37-6 0058182-50-6 0031472-46-5

0028572-30-7 0068585-94-4 0054228-09-0 0029403-69-8 0025749-46-6 0067380-21-6 0037339-47-2 0027837-75-8

0056083-98-8 0028679-80-3 0068647-07-4 0067712-08-7 0030110-00-0 0068492-68-2 0068299-40-1 0042133-45-9

0068140-84-1 0062569-28-2 0058182-50-6 0068140-88-5 0032677-47-7 0067845-68-5 0068171-28-8 0025987-82-0

0068585-94-4 0064386-66-9 0007534-94-3

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