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MATERIAL SAFETY DATA SHEET

HELENA LABORATORIES
1530 Lindbergh Dr./P.O. Box 752
Beaumont, TX 77704-0752
USA Toll Free 800-231-5663

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DATE PREPARED: 5/13/2009
REVISION: 3

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1. IDENTIFICATION:

PRODUCT NAME: SPIFE ALKALINE PHOSPHATASE - 20,40 KIT

PRODUCT NO.: 3345,3346

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2. INGREDIENTS (THE ABOVE KIT CONTAINS THE FOLLOWING ITEMS):

Table with 4 columns: PRODUCT NUMBER, PRODUCT IDENTIFICATION (LABEL NAME), CAS #, %, COMMENTS. Rows include SPIFE ALK PHOS GEL KIT, CITRIC ACID DESTAIN, SPIFE ALK PHOS GEL, SPIFE ALK PHOS REAGENT KIT, ALK PHOS REAGENT, ALK PHOS DILUENT, and 2-AMINO-2-METHYL-1 PROPANOL.

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ATTACHED IS THE MSDS FOR THE ABOVE NAMED HAZARDOUS INGREDIENT.

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1. IDENTIFICATION:

NAME: CITRIC ACID

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2. CHEMICAL COMPOSITION:

Table with 5 columns: CHEMICAL NAME/COMMON NAME, CAS #, %, EXPOSURE LIMITS (OSHA PEL, ACGIH TLV). Row 1: CITRIC ACID, 77-92-9, 100, NIF, NIF.

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NA = Not Applicable NE = Not Established
NL = Not Listed NIF = No Information Found

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3. HAZARD IDENTIFICATION:

EMERGENCY OVERVIEW

PRIMARY ROUTE(S) OF ENTRY:

INHALATION? X SKIN? X INGESTION? X

ACUTE EFFECT OF OVEREXPOSURE:

EYES: CAN CAUSE SEVERE EYE IRRITATION. SYMPTOMS INCLUDE STINGING, TEARING, REDNESS, AND SWELLING OF EYES. CAN INJURE EYE TISSUE.

SKIN: CAN CAUSE SKIN IRRITATION. SYMPTOMS MAY INCLUDE REDNESS AND BURNING OF SKIN AND OTHER SKIN DAMAGE.

INHALATION: BREATHING SMALL AMOUNTS OF THIS MATERIA DURING NORMAL HANDLING IS NOT LIKELY TO CAUSE HARMFUL EFFECTS. BREATHING LARGE AMOUNTS MAY BE HARMFUL.

INGESTION: SWALLOWING SMALL AMOUNTS OF THIS MATERIAL DURING NORMAL HANDLING IS NOT LIKELY TO CAUSE HARMFUL EFFECTS. SWALLOWING LARGE AMOUNTS MAY BE HARMFUL.

CHRONIC EFFECTS OF EXPOSURE: PROLONGED EXPOSURE MAY DAMAGE TOOTH ENAMEL.

4. FIRST AID MEASURES:

EYE CONTACT: FLUSH EYES GENTLY WITH WATER FOR AT LEAST 15 MINUTES WHILE HOLDING EYELIDS APART; SEEK IMMEDIATE MEDICAL ATTENTION.

SKIN CONTACT: REMOVE CONTAMINATED CLOTHING. WASH EXPOSED AREA WITH SOAP AND WATER. IF SYMPTOMS PERSISTS, SEEK MEDICAL ATTENTION. LAUNDRER CLOTHING BEFORE REUSE.

INHALATION: IF SYMPTOMS DEVELOP, MOVE INDIVIDUAL AWAY FROM EXPOSURE AND INTO FRESH AIR. IF SYMPTOMS PERSISTS, SEEK MEDICAL ATTENTION. IF BREATHING IS DIFFICULT, ADMINISTER OXYGEN. KEEP PERSON WARM AND QUIET; SEEK IMMEDIATE MEDICAL ATTENTION.

INGESTION: SEEK MEDICAL ATTENTION. IF INDIVIDUAL IS DROWSY OR UNCONSCIOUS, DO NOT GIVE ANYTHING BY MOUTH; PLACE INDIVIDUAL ON THE LEFT SIDE WITH THE HEAD DOWN. CONTACT A PHYSICIAN, MEDICAL FACILITY, OR POISON CONTROL CENTER FOR ADVICE ABOUT WHETHER TO INDUCE VOMITING. IF POSSIBLE, DO NOT LEAVE INDIVIDUAL UNATTENDED.

5. FIRE AND EXPLOSION HAZARD DATA:

FLASH POINT (METHOD USED): >100°C

FLAMMABLE LIMITS: NIF LEL UEL

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5. FIRE AND EXPLOSION HAZARD DATA (cont):

EXTINGUISHING MEDIA: WATER SPRAY, CARBON DIOXIDE (CO2), DRY CHEMICAL.

SPECIAL FIRE FIGHTING PROCEDURES: NO SPECIAL FIRE HAZARDS ARE KNOWN TO BE ASSOCIATED WITH THIS PRODUCT. WEAR FULL FIREFIGHTING TURN-OUT GEAR (FULL BUNKER GEAR), AND RESPIRATORY PROTECTION (SCBA).

UNUSUAL FIRE AND EXPLOSION HAZARDS: NIF

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6. SPILL OR LEAK PROCEDURES:

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: SHOVEL MATERIALS INTO CONTAINERS. THOROUGHLY SWEEP AREA OF SPILL TO CLEAN UP ANY RESIDUAL MATERIAL. SWEEP UP MATERIAL FOR DISPOSAL OR RECOVERY.

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7. HANDLING AND STORAGE:

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPITED. SINCE EMPTIED CONTAINERS RETAIN PRODUCT RESIDUES (VAPOR, LIQUID, AND/OR SOLID), ALL HAZARD PRECAUTIONS GIVEN IN THE DATA SHEET MUST BE OBSERVED. STORE IN A COOL, DRY, VENTILATED AREA, AWAY FROM INCOMPATIBLE SUBSTANCE.

OTHER PRECAUTIONS: NIF

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8. EXPOSURE CONTROL/PERSONAL PROTECTION:

RESPIRATORY PROTECTION (SPECIFY TYPE): IF NEEDED, USE A NIOSH-APPROVED DUST RESPIRATOR. (ASK YOUR SAFETY REPRESENTATIVE.)

VENTILATION: LOCAL EXHAUST: X MECHANICAL: OTHER:

PROTECTIVE GLOVES: CHEMICAL RESISTANT GLOVES.

EYE PROTECTION: GOGGLES OR SAFETY GLASSES.

OTHER PROTECTIVE EQUIPMENT: WEAR NORMAL WORK CLOTHING COVERING ARMS AND LEGS.

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9. PHYSICAL DATA:

BOILING POINT: NA SPECIFIC GRAVITY (H2O = 1): pH .2.2@10 g/L

VAPOR PRESSURE (MM HG.): 0 MELTING POINT: 153°C AUTOIGNITION TEMP: 1010°C

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9. PHYSICAL DATA (cont):

VAPOR DENSITY (AIR = 1): NO DATA

SOLUBILITY IN WATER: SOLUBLE APPEARANCE AND ODOR: ODORLESS WHITE CRYSTALLINE

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10. STABILITY AND REACTIVITY:

STABILITY: UNSTABLE: STABLE: X

INCOMPATIBILITY (MATERIALS TO AVOID): STRONG ALKALIS

HAZARDOUS DECOMPOSITION OF BY-PRODUCTS: CARBON DIOXIDE AND CARBON MONOXIDE, HYDROCARBONS

HAZARDOUS POLYMERIZATION: MAY OCCUR: WILL NOT OCCUR: X

11. TOXICOLOGICAL INFORMATION:

LD50/LC50: LD50 MOUSE: 5040 MG/KG

REPRODUCTIVE TOXICITY: CITRIC ACID DID NOT CAUSE HARMFUL EFFECTS ON DEVELOPING FETUS WHEN GIVEN IN THE DIET OF LABORATORY ANIMALS, EVEN AT CONCENTRATIONS WHICH WERE HARMFUL TO THE PREGNANT ANIMALS.

IRRITANCY, SENSITIVITY: NIF

CARCINOGENICITY: NL NTP? IARC? OSHA?

POTENTIAL HEALTH EFFECTS:

12. ECOLOGICAL INFORMATION: NIF

13. DISPOSAL CONSIDERATIONS: DISPOSE OF IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.

14. TRANSPORTATION INFORMATION: NOT DANGEROUS GOODS

15. REGULATORY INFORMATION:

CALIFORNIA PROPOSITION 65: THIS PRODUCT DOES NOT CONTAIN ANY CHEMICALS KNOWN TO STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH, OR ANY OTHER REPRODUCTIVE DEFECTS.

	HEALTH	FLAMMABILITY	REACTIVITY	OTHER
HMIS	1	1	0	
NFPA	1	1	0	

16. OTHER INFORMATION: NONE

The information herein is given in good faith but no warranty, expressed or implied, is made.

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1. IDENTIFICATION:

NAME: 2-AMINO-2-METHYL-1-PROPANOL

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3. CHEMICAL COMPOSITION:

Table with 5 columns: CHEMICAL NAME/COMMON NAME, CAS #, %, EXPOSURE LIMITS (OSHA PEL, ACGIH TLV). Row 1: 2-AMINO-2-METHYL-1-PROPANOL, 124-68-5, 98, NE, NE.

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NA = Not Applicable NE = Not Established
NL = Not Listed NIF = No Information Found

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3. HAZARD IDENTIFICATION:

EMERGENCY OVERVIEW

PRIMARY ROUTE(S) OF ENTRY:

INHALATION? X SKIN? X INGESTION? X

ACUTE EFFECT OF OVEREXPOSURE:

EYES: SEVERELY IRRITATING. CONTACT MAY CAUSE PAIN AND SEVERE REDDENING AND INFLAMATION OF THE CONJUNCTIVA. BURNS MAY BE POSSIBLE.

SKIN: SEVERELY IRRITATING. THIS MATERIAL WILL CAUSE SKIN IRRITATION, RESULTING IN REDDENING, ITCHING AND INFLAMATION. BURNS MAY BE POSSIBLE.

INHALATION: THIS MATERIAL WILL CAUSE IRRITATION OF THE RESPIRATORY SYSTEM. SYMPTOMS CAN INCLUDE: SNEEZING, COUGHING, BURNING, ITCHING AND/OR TROUBLE BREATHING. THIS MATERIAL MAY CAUSE INJURY OR ILLNESS IF INHALED.

INGESTION: IF INGESTED, THIS MATERIAL MAY CAUSE IRRITATION TO THE MOUTH, THROAT AND GASTROINTESTINAL TRACT. MAY BE HARMFUL IF SWALLOWED. HUMAN ORAL DOSE HAS BEEN ESTIMATED TO BE BETWEEN 1 OZ. AND 1 PINT (OR 1 POUND) FOR A 150 POUND (70KG) PERSON.

CHRONIC EFFECTS OF EXPOSURE: CHANGES IN UTERINE WEIGHT.

4. FIRST AID MEASURES:

EYE CONTACT: FLUSH IMMEDIATELY WITH LARGE AMOUNTS OF WATER FOR AT LEAST 15 MINUTES. EYELIDS SHOULD BE HELD AWAY FROM THE EYEBALL TO ENSURE THOROUGH RINSING. GET MEDICAL ATTENTION IF IRRITATION PERSISTS.

SKIN CONTACT: IMMEDIATELY FLUSH SKIN WITH PLENTY OF WATER, FOR AT LEAST 15 MINUTES, WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. CONTAMINATED CLOTHING MUST BE LAUNDERED BEFORE REUSE. GET MEDICAL ATTENTION IF IRRITATION DEVELOPS OR PERSISTS.

INHALATION: SAFELY REMOVE VICTIM TO FRESH AIR. IF NOT BREATHING, INSTITUTE CARDIOPULMINARY RESUCITATION (CPR). IF BREATHING IS DIFFICULT, ENSURE CLEAR AIRWAY AND GIVE OXYGEN. GET MEDICAL ATTENTION.

INGESTION: IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. GET MEDICAL ATTENTION.

5. FIRE AND EXPLOSION HAZARD DATA:

FLASH POINT (METHOD USED): 67°C (152.6°F)

FLAMMABLE LIMITS: NO DATA LEL UEL

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5. FIRE AND EXPLOSION HAZARD DATA (cont):

EXTINGUISHING MEDIA: USE A WATER SPRAY, DRY CHEMICAL, ALCOHOL FOAM, ALL PURPOSE FOAM OR CARBON DIOXIDE TO EXTINGUISH FIRE.

SPECIAL FIRE FIGHTING PROCEDURES: AS IN ANY FIRE, WEAR SELF-CONTAINED BREATHING APPARATUS PRESSURE-DEMAND, (MSHA/NIOSH APPROVED OR EQUIVALENT) AND FULL PROTECTIVE GEAR. EVACUATE THE AREA AND FIGHT FIRE FROM A SAFE DISTANCE.

UNUSUAL FIRE AND EXPLOSION HAZARDS: COMBUSTIBLE LIQUID. VAPORS CAN FORM EXPLOSIVE MIXTURES AT TEMPERATURES AT OR ABOVE THE FLASH POINT. IRRITATING AND TOXIC SUBSTANCES MAY BE EMITTED UPON THERMAL DECOMPOSITION.

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6. SPILL OR LEAK PROCEDURES:

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: CAUTION SHOULD BE EXERCISED REGARDING PERSONNEL SAFETY AND EXPOSURE TO THE SPILLED MATERIAL. WEAR A SELF-CONTAINED BREATHING APPARATUS AND APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT. ABSORB SPILL WITH INERT MATERIAL (EXAMPLE: DRY SAND OR EARTH) THEN PLACE IN A CHEMICAL WASTE CONTAINER. CLEAN UP SPILLS IMMEDIATELY UNDER QUALIFIED SUPERVISION OBSERVING PRECAUTIONS IN PROTECTIVE EQUIPMENT SECTION. AFTER REMOVAL, SCRUB THE CONTAMINATED AREA WITH DETERGENT AND FLUSH THOROUGHLY WITH WATER. ABSORB WASH LIQUID AND PLACE IN THE DISPOSABLE CONTAINER. DO NOT FLUSH TO SEWER. AVOID RUNOFF INTO STORM SEWERS AND DITCHES WHICH LEAD TO WATERWAYS.

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7. HANDLING AND STORAGE:

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: DO NOT GET IN EYES, ON SKIN OR CLOTHING. WASH HANDS THOROUGHLY BEFORE EATING, DRINKING OR SMOKING. STORE AT ROOM TEMPERATURE. KEEP CONTAINERS TIGHTLY CLOSED AND UPRIGHT WHEN NOT IN USE. STORE AWAY FROM IGNITION SOURCES. STORE AWAY FROM STRONG OXIDIZERS AND ACIDS.

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8. EXPOSURE CONTROL/PERSONAL PROTECTION:

RESPIRATORY PROTECTION (SPECIFY TYPE): NIOSH/MSHA APPROVED

VENTILATION: LOCAL EXHAUST: X MECHANICAL: OTHER:

PROTECTIVE GLOVES: USE APPROPRIATE CHEMICAL PROTECTIVE GLOVES WHEN HANDLING.

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8. EXPOSURE CONTROL/PERSONAL PROTECTION(cont):

EYE PROTECTION: AVOID EYE CONTACT WITH THIS MATERIAL. WEAR CHEMICAL SAFETY GOGGLES. DO NOT WEAR CONTACT LENSES WHEN WORKING WITH THIS SUBSTANCE.

OTHER PROTECTIVE EQUIPMENT: ADDITIONAL PROTECTION MAY BE NECESSARY TO PREVENT SKIN CONTACT INCLUDING USE OF APRON, GAUNTLETS, BOOTS, IMPERVIOUS PROTECTIVE SUIT AND FACE SHIELD OR SPLASH GOGGLES.

9. PHYSICAL DATA:

BOILING POINT: 165°C SPECIFIC GRAVITY (H2O = 1): 0.934 pH NIF
VAPOR PRESSURE (MM HG.): 3.9 MELTING POINT: 31°C
VAPOR DENSITY (AIR = 1): 3.0
SOLUBILITY IN WATER: NIF APPEARANCE AND ODOR: CLEAR VISCOUS SOLUTION

10. STABILITY AND REACTIVITY:

STABILITY: UNSTABLE: STABLE: X
INCOMPATIBILITY (MATERIALS TO AVOID): INCOMPATIBLE WITH STRONG OXIDIZING AGENTS AND STRONG ACIDS.

HAZARDOUS DECOMPOSITION OF BY-PRODUCTS: MAY EMIT TOXIC FUMES UNDER FIRE CONDITIONS. COMBUSTION MAY PRODUCE CARBON MONOXIDE, CARBON DIOXIDE, AND NITROGEN OXIDES.

HAZARDOUS POLYMERIZATION: MAY OCCUR: WILL NOT OCCUR: X

11. TOXICOLOGICAL INFORMATION:

RTECS NO: UA5950000

LD50/LC50: THE ORAL LD50 IN RATS IS = 2900 MG/KG. ORAL LD50 - MOUSE = 2150 MG/KG. ORAL TDLo - RAT = 44800 MG/KG/8W-C (TOXIC EFFECTS: LIVER - OTHER CHANGES, SKIN AND APPENDAGES - HAIR, RELATED TO CHRONIC DATA - DEATH). REGISTRY OF THE TOXIC EFFECTS OF CHEMICAL SUBSTANCES(RTECS(R)). INHALATION TCLo - RAT = 230 UG/M3/4H/13W-I (TOXIC EFFECTS: CARDIAC - CHANGES IN HEART WEIGHT; LUNGS/THORAX/RESPIRATION - CHANGES IN LUNG WEIGHT; RELATED TO CHRONIC DATA - CHANGES IN UTERINE WEIGHT).

11. TOXICOLOGICAL INFORMATION(cont):

CARCINOGENICITY: NL NTP? NL IARC? NL OSHA? NL

POTENTIAL HEALTH EFFECTS: SEE SECTION 3

12. ECOLOGICAL INFORMATION: NO DATA AVAILABLE

13. DISPOSAL CONSIDERATIONS: OBSERVE ALL FEDERAL AND STATE REGULATIONS

14. TRANSPORTATION INFORMATION:

PROPER SHIPPING NAME: COMBUSTIBLE LIQUID, NOS  
HAZARD CLASS: COMBUSTIBLE LIQUID UN/NA CODE UN1993  
PACKAGING GROUP: III  
REPORTABLE QUANTITY: NONE  
LABELS REQUIRED: NONE

15. REGULATORY INFORMATION:

THIS PRODUCT IS LISTED ON THE INVENTORY OF EXISTING CHEMICAL SUBSTANCES UNDER THE TOXIC SUBSTANCE CONTROL ACT (TSCA). TSCA SECTION 8(b).

CALIFORNIA PROPOSITION 65: THIS PRODUCT DOES NOT CONTAIN ANY CHEMICALS KNOWN TO STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH, OR ANY OTHER REPRODUCTIVE DEFECTS.

	HEALTH	FLAMMABILITY	REACTIVITY	OTHER
HMIS	2	2	0	
NFPA	2	2	0	

16. OTHER INFORMATION: NONE

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