



SIGMA-ALDRICH

ALDRICH CHEMICAL COMPANY, INC.
P.O. BOX 355
MILWAUKEE, WISCONSIN 53201, USA

ATTN: SAFETY DIRECTOR

EMERGENCY PHONE 1-414-273-3850

MICHIGAN STATE UNIVERSITY
ACCOUNTS PAYABLE DEPT
360 J HANNAH ADMINISTRATION BLDG
EAST LANSING MI 48824

DATE 09/24/96
CUST#: 323756
PO#: 9109AR-629439

M A T E R I A L S A F E T Y D A T A S H E E T PAGE 1

SECTION 1. - - - - - CHEMICAL IDENTIFICATION - - - - -

CATALOG #: 21930-4
NAME: (R)-(-)-EPINEPHRINE, 99%

SECTION 2. - - - - - COMPOSITION/INFORMATION ON INGREDIENTS - - - - -

CAS #: 51-43-4
MF: C9H13NO3
EC NO: 200-098-7

SYNONYMS

ADNEPHRINE * ADRENAL * ADRENALIN * L-ADRENALIN * ADRENALINE * (-)-
ADRENALINE * L-ADRENALINE * ADRENAMINE * ADRENAN * ADRENAPAX *
ADRENASOL * ADRENINE * ADRENODIS * ADRENOHORMA * ADRENOSAN *
ADRENUTOL * ADRLIN * ADRLINE * ASTHMA METER MIST * ASTHMA-NEFRIN *
ASTMAHALIN * ASTMINHAL * BALMADREN * 1,2-BENZENEDIOL, 4-(1-HYDROXY-2-
(METHYLAMINO)ETHYL)-, (R)- (9CI) * BERNARENIN * BIORENINE * BOSMIN *
BREVIRENIN * BRONKAID MIST * CHELAFRIN * CORISOL * 3,4-DIHYDROXY-
ALPHA-((METHYLAMINO)METHYL)BENZYL ALCOHOL * L-1-(3,4-DIHYDROXYPHENYL)-
2-METHYLAMINOETHANOL * DRENAMIST * DYLEPHRIN * DYSPNE-INHAL * EPIFRIN
* EPINEFRIN (CZECH) * EPINEFRINA * EPINEPHRAN * EPINEPHRINE * (-)-
EPINEPHRINE * L-EPINEPHRINE * (R)-EPINEPHRINE * L-EPINEPHRINE
(SYNTHETIC) * EPIRENAMINE * L-EPIRENAMINE * EPIRENAN * EPITRATE *
EXADRIN * GLAUCOSAN * GLYCIRENAN * HAEMOSTASIN * HAEMOSTATIN *
HEKTALIN * HEMISINE * HEMOSTASIN * HEMOSTATIN * HYPERNEPHRIN *
HYPORENIN * INTRANEFRIN * KIDOLINE * LEVORENIN * LEVORENINE *
LYOPHRIN * METANEPHRIN * METHYLARTERENOL * MUCIDRINA * MYOSTHENINE *
MYTRATE * NEPHRIDINE * NIERALINE * PARANEPHRIN * PRIMATENE MIST *
RCRA WASTE NUMBER P042 * RENAGLANDIN * RENALEPTINE * RENALINA *
RENOFORM * RENOSTYPTICIN * RENOSTYPTIN * SCURENALINE * SINDRENINA *
SOLADREN * SPHYGMOGENIN * STYPTIRENAL * SUPRACAPSULIN * SUPRADIN *
SUPRANEFRAN * SUPRANEPHRANE * SUPRANEPHRINE * SUPRANOL *
SUPRARENALINE * SUPRARENIN * SUPREL * SURRENINE * SUSPHRINE *
SYMPATHIN I * TONOGEN * VAPONEFRIN * VASOCONSTRICTINE * VASODRINE *
VASOTONIN *

SECTION 3. - - - - - HAZARDS IDENTIFICATION - - - - -

LABEL PRECAUTIONARY STATEMENTS

HIGHLY TOXIC (USA)
TOXIC (EU)
MAY CAUSE HARM TO THE UNBORN CHILD.
TOXIC BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
TARGET ORGAN(S):
HEART
SMOOTH MUSCLE

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SIGMA-ALDRICH
RESEARCH

ALDRICH CHEMICAL COMPANY, INC.
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M A T E R I A L S A F E T Y D A T A S H E E T P A G E 2

- - - - -

CATALOG #: 21930-4
NAME: (R)-(-)-EPINEPHRINE, 99%

IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE). WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE PROTECTION. DO NOT BREATHE DUST. LIGHT SENSITIVE

SECTION 4. - - - - - FIRST-AID MEASURES - - - - -

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES OR SKIN WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. ASSURE ADEQUATE FLUSHING OF THE EYES BY SEPARATING THE EYELIDS WITH FINGERS. IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS. CALL A PHYSICIAN IMMEDIATELY. WASH CONTAMINATED CLOTHING BEFORE REUSE.

SECTION 5. - - - - - FIRE FIGHTING MEASURES - - - - -

EXTINGUISHING MEDIA
WATER SPRAY.
CARBON DIOXIDE, DRY CHEMICAL POWDER OR APPROPRIATE FOAM.

SPECIAL FIREFIGHTING PROCEDURES
WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES.

UNUSUAL FIRE AND EXPLOSIONS HAZARDS
EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

SECTION 6. - - - - - ACCIDENTAL RELEASE MEASURES - - - - -

EVACUATE AREA.
WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY RUBBER GLOVES.
SWEEP UP, PLACE IN A BAG AND HOLD FOR WASTE DISPOSAL.
AVOID RAISING DUST.
VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.

SECTION 7. - - - - - HANDLING AND STORAGE - - - - -

REFER TO SECTION 8.

SECTION 8. - - - - - EXPOSURE CONTROLS/PERSONAL PROTECTION - - - - -

WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING.

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M A T E R I A L S A F E T Y D A T A S H E E T P A G E 3

CATALOG #: 21930-4
NAME: (R)-(-)-EPINEPHRINE, 99%

USE ONLY IN A CHEMICAL FUME HOOD.
SAFETY SHOWER AND EYE BATH.
AVOID INHALATION.
DO NOT GET IN EYES, ON SKIN, ON CLOTHING.
AVOID PROLONGED OR REPEATED EXPOSURE.
WASH THOROUGHLY AFTER HANDLING.
TERATOGEN.
HIGHLY TOXIC.
IRRITANT.
KEEP TIGHTLY CLOSED.
LIGHT SENSITIVE
STORE IN A COOL DRY PLACE.

SECTION 9. - - - - - PHYSICAL AND CHEMICAL PROPERTIES - - - - -

APPEARANCE AND ODOR
OFF-WHITE POWDER

PHYSICAL PROPERTIES
MELTING POINT: 215 C (DEC)

SECTION 10. - - - - - STABILITY AND REACTIVITY - - - - -

INCOMPATIBILITIES
ACIDS
ACID CHLORIDES
ACID ANHYDRIDES
OXIDIZING AGENTS
MAY DECOMPOSE ON EXPOSURE TO LIGHT.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
TOXIC FUMES OF:
CARBON MONOXIDE, CARBON DIOXIDE
NITROGEN OXIDES

SECTION 11. - - - - - TOXICOLOGICAL INFORMATION - - - - -

ACUTE EFFECTS
MAY BE FATAL IF INHALED, SWALLOWED, OR ABSORBED THROUGH SKIN.
CAUSES EYE AND SKIN IRRITATION.
MATERIAL IS IRRITATING TO MUCOUS MEMBRANES AND UPPER
RESPIRATORY TRACT.

CHRONIC EFFECTS
LABORATORY EXPERIMENTS IN ANIMALS HAVE SHOWN FETOTOXIC RESULTS.
TARGET ORGAN(S):
HEART
SMOOTH MUSCLE

RTECS #: D02625000

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M A T E R I A L S A F E T Y D A T A S H E E T PAGE 4

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NAME: (R)-(-)-EPINEPHRINE, 99%

BENZYL ALCOHOL, 3,4-DIHYDROXY-ALPHA-((METHYLAMINO)METHYL)-, (-)-

TOXICITY DATA

SCU-MAN LDLO:735 UG/KG	85DCAI 2,73,70
SKN-RAT LD50:62 MG/KG	GTPZAB 8(4),30,64
SCU-RAT LD50:5 MG/KG	SMWOAS 71,554,41
IVN-RAT LD50:150 UG/KG	AIPTAK 41,365,31
IMS-RAT LD50:3500 MG/KG	27ZIAO -105,73
IPR-MUS LD50:4 MG/KG	JPETAB 90,110,47
SCU-MUS LD50:1470 UG/KG	AEPPAE 202,658,43
IVN-MUS LD50:217 UG/KG	APTOA6 38,474,76
SCU-DOG LD50:5 MG/KG	NIIRDN 6,120,82
IVN-DOG LD50:100 UG/KG	NIIRDN 6,120,82
SCU-RBT LD50:4 MG/KG	SMWOAS 71,554,41
IVN-RBT LD50:50 UG/KG	SMWOAS 71,554,41

TARGET ORGAN DATA

BEHAVIORAL (SOMNOLENCE)
BEHAVIORAL (HALLUCINATIONS, DISTORTED PERCEPTIONS)
BEHAVIORAL (CONVULSIONS OR EFFECT ON SEIZURE THRESHOLD)
BEHAVIORAL (EXCITEMENT)
BEHAVIORAL (CHANGE IN MOTOR ACTIVITY)
BEHAVIORAL (MUSCLE WEAKNESS)
CARDIAC (CARDIOMYOPATHY INCLUDING INFARCTION)
CARDIAC (ARRYTHMIAS)
CARDIAC (EKG CHANGES NOT DIAGNOSTIC OF ABOVE)
CARDIAC (PULSE RATE INCREASED WITHOUT FALL IN BP)
CARDIAC (CHANGE IN RATE)
VASCULAR (BP LOWERING NOT CHARACTERIZED IN AUTONOMIC SECTION)
VASCULAR (REGIONAL OR GENERAL ARTERIOLAR CONSTRICTION)
VASCULAR (CONTRACTION)
LUNGS, THORAX OR RESPIRATION (DYSPPNAE)
LUNGS, THORAX OR RESPIRATION (RESPIRATORY STIMULATION)
GASTROINTESTINAL (NAUSEA OR VOMITING)
SKIN AND APPENDAGES (SWEATING)
SKIN AND APPENDAGES (HAIR)
PATERNAL EFFECTS (TESTES, EPIDIDYMIS, SPERM DUCT)
MATERNAL EFFECTS (OTHER EFFECTS ON FEMALE)
EFFECTS ON FERTILITY (MATING PERFORMANCE)
EFFECTS ON FERTILITY (MALE FERTILITY INDEX)
EFFECTS ON FERTILITY (PRE-IMPLANTATION MORTALITY)
EFFECTS ON FERTILITY (POST-IMPLANTATION MORTALITY)
EFFECTS ON FERTILITY (OTHER MEASURES OF FERTILITY)
EFFECTS ON EMBRYO OR FETUS (FETOTOXICITY)
EFFECTS ON EMBRYO OR FETUS (FETAL DEATH)
SPECIFIC DEVELOPMENTAL ABNORMALITIES (CENTRAL NERVOUS SYSTEM)
SPECIFIC DEVELOPMENTAL ABNORMALITIES (MUSCULOSKELETAL SYSTEM)
SPECIFIC DEVELOPMENTAL ABNORMALITIES (CARDIOVASCULAR SYSTEM)
EFFECTS ON NEWBORN (LIVE BIRTH INDEX)
EFFECTS ON NEWBORN (GROWTH STATISTICS)

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EFFECTS ON NEWBORN (BEHAVIORAL)
NUTRITIONAL AND GROSS METABOLIC (WEIGHT LOSS OR DECREASED WEIGHT GAIN)
NUTRITIONAL AND GROSS METABOLIC (OTHER CHANGES)
ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES
(RTECS) DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN RTECS FOR
COMPLETE INFORMATION.

SECTION 12. - - - - - ECOLOGICAL INFORMATION - - - - -
DATA NOT YET AVAILABLE.

SECTION 13. - - - - - DISPOSAL CONSIDERATIONS - - - - -
DISSOLVE OR MIX THE MATERIAL WITH A COMBUSTIBLE SOLVENT AND BURN IN A
CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER.
OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.

SECTION 14. - - - - - TRANSPORT INFORMATION - - - - -
CONTACT ALDRICH CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

SECTION 15. - - - - - REGULATORY INFORMATION - - - - -

EUROPEAN INFORMATION

TOXIC
R 61
MAY CAUSE HARM TO THE UNBORN CHILD.
R 23/24/25
TOXIC BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.
R 36/37/38
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
S 45
IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE
IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).
S 36/37/39
WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE
PROTECTION.
S 22
DO NOT BREATHE DUST.

REVIEWS, STANDARDS, AND REGULATIONS

OEL=MAK
NOHS 1974: HZD A1920; NIS 2; TNF 219; NOS 7; TNE 1765
NOES 1983: HZD A1920; NIS 2; TNF 327; NOS 10; TNE 18887; TFE 14836
EPA GENETOX PROGRAM 1988, NEGATIVE: SPERM MORPHOLOGY-MOUSE
EPA GENETOX PROGRAM 1988, INCONCLUSIVE: MAMMALIAN MICRONUCLEUS
EPA TSCA SECTION 8(B) CHEMICAL INVENTORY
EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, JULY 1996

SECTION 16. - - - - - OTHER INFORMATION - - - - -
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M A T E R I A L S A F E T Y D A T A S H E E T P A G E 6

- - - - -

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