

SIGMA-ALDRICH

MATERIAL SAFETY DATA SHEET

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Version 1.6

Section 1 - Product and Company Information

Product Name TRYPAN BLUE (DYE CONT. CA. 60%)
Product Number 302643
Brand ALDRICH

Company Sigma-Aldrich
Address 3050 Spruce Street
SAINT LOUIS MO 63103 US

Technical Phone: 800-325-5832
Fax: 800-325-5052
Emergency Phone: 314-776-6555

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
TRYPAN BLUE	72-57-1	Yes

Formula C34H24N6O14S4Na4

Synonyms Amanil Sky Blue R * Amidine Blue 4B * Azidinblau 3B * Azidine Blue 3B * Azurro diretto 3B * Bencidal Blue 3B * Benzaminblau 3B * Benzamine Blue * Benzamine Blue 3B * Benzanil Blue 3BN * Benzanil Blue R * Benzoblau 3B * Benzo Blue * Benzo Blue 3B * Benzo Blue 3BS * Bleu diamine * Bleu diazole N 3B * Bleu directe 3B * Bleue diretto 3B * Bleu trypane N * Blue 3B * Blue EMB * Brasilamina Blue 3B * Brasilazina Blue 3B * Centraline Blue 3B * Chloramiblau 3B * Chloramine Blue * Chloramine Blue 3B * Chlorazol Blue 3B * Chrome Leather Blue 3B * C.I. 23850 * C.I. Direct Blue 14 * C.I. Direct Blue 14, tetrasodium salt * Congoblau 3B * Congo Blue * Congo Blue 3B * Cresotine Blue 3B * Diaminblau 3B * Diamineblue * Diamine Blue 3B * Dianilblau * Dianilblau H3G * Dianil Blue * Dianil Blue H3G * Diaphtamine Blue TH * Diazine Blue 3B * Diazol Blue 3B * Diphenyl Blue 3B * Directblau 3B * Direct Blue 14 * Direct Blue 3B * Direct Blue 3BX * Direct Blue M3B * Directakol Blue 3BL * Hispamin Blue 3BX * Modr Prima 14 (Czech) * Modr Trypanova (Czech) * Naphtamine Blue 3BX * Naphthaminblau 3BX * Naphthamine Blue 3BX * Naphthylamine Blue * NCI C61289 * Niagara Blue * Niagara Blue 3B * Orion Blue 3B * Paramine Blue 3B * Parkibleu * Parkipan * Pontamine Blue 3BX * Pyrazol Blue 3B * Pyrotropblau * RCRA waste number U236 * Renolblau 3B * Sodium ditolyldisazobis-8-amino-1-naphthol-3,6-disulfonate * Sodium ditolyldisazobis-8-amino-1-naphthol-3,6-disulphonate * Trianol Direct Blue 3B * Triazolblau 3BX * Tripa

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Toxic.

May cause cancer.

Target organ(s): Liver. Calif. Prop. 65 carcinogen.

HMIS RATING

HEALTH: 0*

FLAMMABILITY: 0

REACTIVITY: 0

NFPA RATING

HEALTH: 0

FLAMMABILITY: 0

REACTIVITY: 0

*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

INHALATION EXPOSURE

If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

DERMAL EXPOSURE

In case of contact, immediately wash skin with soap and copious amounts of water.

EYE EXPOSURE

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

FLASH POINT

N/A

AUTOIGNITION TEMP

N/A

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s): Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves. Wear disposable coveralls and discard them after use.

METHODS FOR CLEANING UP

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

HANDLING

User Exposure: Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep tightly closed.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Use only in a chemical fume hood. Safety shower and eye bath.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

Appearance	Physical State: Solid	
Property	Value	At Temperature or Pressure
Molecular Weight	960.82 AMU	
pH	N/A	
BP/BP Range	N/A	
MP/MP Range	300 °C	
Freezing Point	N/A	
Vapor Pressure	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
SG/Density	N/A	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	

VOC Content	N/A
Water Content	N/A
Solvent Content	N/A
Evaporation Rate	N/A
Viscosity	N/A
Surface Tension	N/A
Partition Coefficient	N/A
Decomposition Temp.	N/A
Flash Point	N/A
Explosion Limits	N/A
Flammability	N/A
Autoignition Temp	N/A
Refractive Index	N/A
Optical Rotation	N/A
Miscellaneous Data	N/A
Solubility	N/A

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.

Materials to Avoid: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Nitrogen oxides, Sulfur oxides, Sodium oxides.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: May cause eye irritation.

Inhalation: Material may be irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.

Ingestion: May be harmful if swallowed.

TARGET ORGAN(S) OR SYSTEM(S)

Liver.

SIGNS AND SYMPTOMS OF EXPOSURE

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

TOXICITY DATA

Oral

Rat

6200 mg/kg

LD50

Subcutaneous

Mouse

267 MG/KG

LD50

Intravenous

Mouse
328 MG/KG
LD50

CHRONIC EXPOSURE - CARCINOGEN

Result: This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.

Species: Rat
Route of Application: Subcutaneous
Dose: 630 MG/KG
Exposure Time: 43W
Frequency: I
Result: Tumorigenic: Carcinogenic by RTECS criteria.
Tumorigenic: Tumors at site or application.

Species: Rat
Route of Application: Parenteral
Dose: 250 MG/KG
Exposure Time: 10W
Frequency: I
Result: Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Blood: Lymphomas including Hodgkin's disease.

Species: Rat
Route of Application: Subcutaneous
Dose: 7500 MG/KG
Exposure Time: 86W
Frequency: I
Result: Tumorigenic: Neoplastic by RTECS criteria. Liver: Tumors.
Tumorigenic: Tumors at site or application.

Species: Mouse
Route of Application: Subcutaneous
Dose: 1275 MG/KG
Exposure Time: 34W
Frequency: I
Result: Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Liver: Tumors. Blood: Leukemia

Species: Rat
Route of Application: Subcutaneous
Dose: 1300 MG/KG
Exposure Time: 1Y
Frequency: I
Result: Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Liver: Tumors. Blood: Lymphomas including Hodgkin's disease.

Species: Rat
Route of Application: Subcutaneous
Dose: 300 MG/KG
Exposure Time: 6W
Frequency: I
Result: Blood: Lymphomas including Hodgkin's disease.
Liver: Tumors. Tumorigenic: Equivocal tumorigenic agent by RTECS criteria.

Species: Rat
Route of Application: Parenteral
Dose: 620 MG/KG

Exposure Time: 31W
Frequency: I
Result: Liver:Tumors. Tumorigenic:Equivocal tumorigenic agent by RTECS criteria.

Species: Rat
Route of Application: Unreported
Dose: 700 MG/KG
Exposure Time: 4W
Frequency: I
Result: Liver:Tumors. Tumorigenic:Equivocal tumorigenic agent by RTECS criteria.

IARC CARCINOGEN LIST

Rating: Group 2B

CHRONIC EXPOSURE - TERATOGEN

Result: Laboratory experiments have shown teratogenic effects.

Species: Rat
Dose: 40 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (8D PREG)
Result: Specific Developmental Abnormalities: Cardiovascular (circulatory) system. Specific Developmental Abnormalities: Musculoskeletal system.

Species: Rat
Dose: 12500 UG/KG
Route of Application: Intraperitoneal
Exposure Time: (8D PREG)
Result: Specific Developmental Abnormalities: Body wall.

Species: Rat
Dose: 30 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (8D PREG)
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Central nervous system. Specific Developmental Abnormalities: Eye, ear.

Species: Rat
Dose: 14 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (8D PREG)
Result: Specific Developmental Abnormalities: Eye, ear.

Species: Rat
Dose: 50 MG/KG
Route of Application: Subcutaneous
Exposure Time: (8D PREG)
Result: Specific Developmental Abnormalities: Musculoskeletal system.

Species: Rat
Dose: 50 MG/KG
Route of Application: Subcutaneous
Exposure Time: (8D PREG)
Result: Specific Developmental Abnormalities: Cardiovascular (circulatory) system.

Species: Rat
Dose: 5 MG/KG
Route of Application: Parenteral
Exposure Time: (8D PREG)
Result: Specific Developmental Abnormalities: Cardiovascular (circulatory) system.

Species: Rat
Dose: 150 MG/KG
Route of Application: Parenteral
Exposure Time: (8-10D PREG)
Result: Specific Developmental Abnormalities: Central nervous system. Specific Developmental Abnormalities: Musculoskeletal system.

Species: Rat
Dose: 225 MG/KG
Route of Application: Unreported
Exposure Time: (7-9D PREG)
Result: Specific Developmental Abnormalities: Central nervous system. Specific Developmental Abnormalities: Musculoskeletal system.

Species: Mouse
Dose: 66667 UG/KG
Route of Application: Intraperitoneal
Exposure Time: (8D PREG)
Result: Specific Developmental Abnormalities: Central nervous system. Specific Developmental Abnormalities: Eye, ear. Specific Developmental Abnormalities: Body wall.

Species: Mouse
Dose: 100 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (7D PREG)
Result: Specific Developmental Abnormalities: Other developmental abnormalities.

Species: Mouse
Dose: 45 MG/KG
Route of Application: Subcutaneous
Exposure Time: (6-14D PREG)
Result: Specific Developmental Abnormalities: Central nervous system. Specific Developmental Abnormalities: Eye, ear. Specific Developmental Abnormalities: Craniofacial (including nose and tongue).

Species: Mouse
Dose: 45 MG/KG
Route of Application: Subcutaneous
Exposure Time: (6-14D PREG)
Result: Effects on Embryo or Fetus: Fetal death.

Species: Rabbit
Dose: 150 MG/KG
Route of Application: Subcutaneous
Exposure Time: (1D PRE/2-7D PREG)
Result: Specific Developmental Abnormalities: Central nervous system. Specific Developmental Abnormalities: Musculoskeletal system. Specific Developmental Abnormalities: Gastrointestinal system.

Species: Pig
Dose: 100 MG/KG
Route of Application: Intravenous
Exposure Time: (10D PREG)
Result: Specific Developmental Abnormalities: Cardiovascular (circulatory) system. Specific Developmental Abnormalities: Gastrointestinal system.

Species: Guinea pig
Dose: 40 MG/KG
Route of Application: Subcutaneous
Exposure Time: (11D PREG)
Result: Maternal Effects: Parturition. Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Species: Guinea pig
Dose: 40 MG/KG
Route of Application: Subcutaneous
Exposure Time: (11D PREG)
Result: Specific Developmental Abnormalities: Craniofacial (including nose and tongue). Specific Developmental Abnormalities: Musculoskeletal system. Specific Developmental Abnormalities: Body wall.

Species: Hamster
Dose: 20 UG/KG
Route of Application: Subcutaneous
Exposure Time: (8D PREG)
Result: Effects on Embryo or Fetus: Fetal death. Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Species: Hamster
Dose: 20 UG/KG
Route of Application: Subcutaneous
Exposure Time: (8D PREG)
Result: Specific Developmental Abnormalities: Central nervous system. Specific Developmental Abnormalities: Body wall. Specific Developmental Abnormalities: Homeostasis

Species: Hamster
Dose: 130 UG/KG
Route of Application: Subcutaneous
Exposure Time: (8D PREG)
Result: Specific Developmental Abnormalities: Musculoskeletal system.

Species: Hamster
Dose: 900 UG/KG
Route of Application: Subcutaneous
Exposure Time: (8D PREG)
Result: Specific Developmental Abnormalities: Other developmental abnormalities.

Species: Mammal
Dose: 25 MG/KG
Route of Application: Subcutaneous

Exposure Time: (13D PREG)
Result: Specific Developmental Abnormalities: Body wall.
Specific Developmental Abnormalities: Craniofacial (including nose and tongue).

Species: Mammal
Dose: 50 MG/KG
Route of Application: Subcutaneous
Exposure Time: (13D PREG)
Result: Specific Developmental Abnormalities: Musculoskeletal system. Specific Developmental Abnormalities: Urogenital system.

CHRONIC EXPOSURE - MUTAGEN

Species: Rat
Route: Oral
Dose: 125 MG/KG
Mutation test: Unscheduled DNA synthesis

Species: Rat
Dose: 10 UMOL/L
Cell Type: liver
Mutation test: Unscheduled DNA synthesis

Species: Rat
Dose: 500 MG/KG
Cell Type: S. typhimurium
Mutation test: Body fluid assay

Species: Mouse
Route: Intraperitoneal
Dose: 100 MG/KG
Mutation test: Cytogenetic analysis

Species: Hamster
Dose: 100 UMOL/L
Cell Type: liver
Mutation test: Unscheduled DNA synthesis

Mutation test: Histidine reversion (Ames)

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Rat
Dose: 150 MG/KG
Route of Application: Oral
Exposure Time: (7-9D PREG)
Result: Specific Developmental Abnormalities: Musculoskeletal system. Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).
Specific Developmental Abnormalities: Central nervous system.

Species: Rat
Dose: 12500 UG/KG
Route of Application: Intraperitoneal
Exposure Time: (8D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).
Effects on Embryo or Fetus: Fetal death. Specific Developmental Abnormalities: Central nervous system.

Species: Rat

Dose: 10 MG/KG
Route of Application: Subcutaneous
Exposure Time: (7D PREG)
Result: Effects on Newborn: Behavioral.

Species: Rat
Dose: 50 MG/KG
Route of Application: Subcutaneous
Exposure Time: (8D PREG)
Result: Specific Developmental Abnormalities: Eye, ear. Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Specific Developmental Abnormalities: Central nervous system.

Species: Rat
Dose: 50 MG/KG
Route of Application: Intravenous
Exposure Time: (8D PREG)
Result: Specific Developmental Abnormalities: Central nervous system. Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth).

Species: Rat
Dose: 15 MG/KG
Route of Application: Intravenous
Exposure Time: (8D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Species: Rat
Dose: 50 MG/KG
Route of Application: Parenteral
Exposure Time: (8D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Species: Rat
Dose: 2500 UG/KG
Route of Application: Intrauterine
Exposure Time: (6D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Species: Mouse
Dose: 100 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (6D PREG)
Result: Effects on Fertility: Other measures of fertility

Species: Mouse
Dose: 66667 UG/KG
Route of Application: Intraperitoneal
Exposure Time: (8D PREG)
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Species: Mouse
Dose: 1 GM/KG
Route of Application: Intraperitoneal
Exposure Time: (8-12D PREG)

Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Newborn: Live birth index (# fetuses per litter; measured after birth). Effects on Newborn: Viability index (e.g., # alive at day 4 per # born alive).

Species: Mouse
Dose: 25 MG/KG
Route of Application: Subcutaneous
Exposure Time: (8D PREG)
Result: Specific Developmental Abnormalities: Other developmental abnormalities. Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Species: Mouse
Dose: 160 MG/KG
Route of Application: Subcutaneous
Exposure Time: (8D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth). Specific Developmental Abnormalities: Musculoskeletal system.

Species: Rabbit
Dose: 150 MG/KG
Route of Application: Subcutaneous
Exposure Time: (1D PRE/2-7D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or Fetus: Fetal death.

Species: Guinea pig
Dose: 40 MG/KG
Route of Application: Subcutaneous
Exposure Time: (11D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Species: Guinea pig
Dose: 33 MG/KG
Route of Application: Parenteral
Exposure Time: (11D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Species: Mammal
Dose: 25 MG/KG
Route of Application: Subcutaneous
Exposure Time: (18D PREG)
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Observe all federal, state, and local environmental regulations. (DN)Requires special label: "Contains a substance which is regulated by Dannish work environmental law due to the risk of carcinogenic properties."

Section 14 - Transport Information

DOT

Proper Shipping Name: Environmentally hazardous substances, solid, n.o.s.
UN#: 3077
Class: 9
Packing Group: Packing Group III
Hazard Label: Class 9
PIH: Not PIH

IATA

Non-Hazardous for Air Transport: Non-hazardous for air transport.

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION

Symbol of Danger: T
Indication of Danger: Toxic.
R: 45
Risk Statements: May cause cancer.
S: 53-45
Safety Statements: Restricted to professional users. Attention - Avoid exposure - obtain special instructions before use. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Toxic.
Risk Statements: May cause cancer.
Safety Statements: Restricted to professional users. Attention - Avoid exposure - obtain special instructions before use. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
US Statements: Target organ(s): Liver. Calif. Prop. 65 carcinogen.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: Yes
DEMINIMIS: 0.1 %
NOTES: This product is subject to SARA section 313 reporting requirements.
TSCA INVENTORY ITEM: Yes

UNITED STATES - STATE REGULATORY INFORMATION

CALIFORNIA PROP - 65

California Prop - 65: This product is or contains chemical(s) known to the state of California to cause cancer. This product is or contains chemical(s) known to the state of California to cause cancer.

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

Section 16 - Other Information

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2008 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.