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SAFETY DATA SHEET

SECTION 1. CHEMICAL IDENTIFICATION

| | |
|---------------------------------|-----------------------------------------------------|
| CATALOG #: | 42542 |
| NAME: | Trypan blue |
| SYNONYMS: | Direct blue 14 |
| 24 HOUR EMERGENCY TELEPHONE: | (800) 535-5053(USA) 352-323-3500 (INTERNATIONAL) |
| TO REQUEST AN MSDS: | (800) 869-9290 |
| CUSTOMER SERVICE: | (630) 766-2112 |

SECTION 2. HAZARDS IDENTIFICATION

CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

GHS CLASSIFICATION IN ACCORDANCE WITH 29 CFR 1910 (OSHA HCS)
CARCINOGENICITY (CATEGORY 1B), H350

FOR THE FULL TEXT OF THE H-STATEMENTS MENTIONED IN THIS SECTION, SEE
SECTION 16.

**GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS
PICTOGRAM**



SIGNAL WORD DANGER

HAZARD STATEMENT(S)
H350 MAY CAUSE CANCER.

PRECAUTIONARY STATEMENT(S)
P201 OBTAIN SPECIAL INSTRUCTIONS BEFORE USE.
P202 DO NOT HANDLE UNTIL ALL SAFETY PRECAUTIONS HAVE BEEN READ AND UNDERSTOOD.
P280 WEAR PROTECTIVE GLOVES/ PROTECTIVE CLOTHING/ EYE PROTECTION/ FACE PROTECTION.
P308 + P313 IF EXPOSED OR CONCERNED: GET MEDICAL ADVICE/ ATTENTION.
P405 STORE LOCKED UP.
P501 DISPOSE OF CONTENTS/ CONTAINER TO AN APPROVED WASTE DISPOSAL PLANT.

HAZARDS NOT OTHERWISE CLASSIFIED (HNOC) OR NOT COVERED BY GHS NONE

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

MF: $C_{34}H_{24}N_6O_{14}S_4Na_4$
MW: 960.81
CAS-NO. 72-57-1
PURITY: $\geq 40\%$ (Dye content)

HAZARDOUS COMPONENTS

| COMPONENT | CLASSIFICATION | CONCENTRATION |
|-----------------------------------------------------------------------------------------------------------------------|----------------|---------------|
| TETRASODIUM 3,3'-[(3,3'-DIMETHYL[1,1'-BIPHENYL]-4,4'-DIYL)BIS(AZO)]BIS[5-AMINO-4-HYDROXYNAPHTHALENE-2,7-DISULPHONATE] | CARC. 1B; H350 | $\leq 100\%$ |

FOR THE FULL TEXT OF THE H-STATEMENTS MENTIONED IN THIS SECTION, SEE SECTION 16.

SECTION 4. FIRST-AID MEASURES

DESCRIPTION OF FIRST AID MEASURES

| | |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| GENERAL ADVICE | CONSULT A PHYSICIAN. SHOW THIS SAFETY DATA SHEET TO THE DOCTOR IN ATTENDANCE.MOVE OUT OF DANGEROUS AREA. |
| IF INHALED | IF BREATHED IN, MOVE PERSON INTO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. CONSULT A PHYSICIAN. |
| IN CASE OF SKIN CONTACT | WASH OFF WITH SOAP AND PLENTY OF WATER. CONSULT A PHYSICIAN. |
| IN CASE OF EYE CONTACT | FLUSH EYES WITH WATER AS A PRECAUTION. |
| IF SWALLOWED | NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. RINSE MOUTH WITH WATER. CONSULT A PHYSICIAN. |
| MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED | THE MOST IMPORTANT KNOWN SYMPTOMS AND EFFECTS ARE DESCRIBED IN THE LABELLING (SEE SECTION 2.2) AND/OR IN SECTION 11 |
| INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED | NO DATA AVAILABLE |

SECTION 5. FIRE AND EXPLOSION DATA

| | |
|--------------------------------------------------------------|--------------------------------------------------------------------------|
| EXTINGUISHING MEDIA | |
| SUITABLE EXTINGUISHING MEDIA | USE WATER SPRAY, ALCOHOL-RESISTANT FOAM, DRY CHEMICAL OR CARBON DIOXIDE. |
| SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE | CARBON OXIDES, NITROGEN OXIDES (NOX), SULPHUR OXIDES, SODIUM OXIDES |
| ADVICE FOR FIREFIGHTERS | WEAR SELF CONTAINED BREATHING APPARATUS FOR FIRE FIGHTING IF NECESSARY. |
| FURTHER INFORMATION | NO DATA AVAILABLE |

SECTION 6. ACCIDENTAL RELEASE MEASURES

| | |
|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES | USE PERSONAL PROTECTIVE EQUIPMENT. AVOID DUST FORMATION. AVOID BREATHING VAPOURS, MIST OR GAS. ENSURE ADEQUATE VENTILATION. EVACUATE PERSONNEL TO SAFE AREAS. AVOID BREATHING DUST. FOR PERSONAL PROTECTION SEE SECTION 8. |
| ENVIRONMENTAL PRECAUTIONS | PREVENT FURTHER LEAKAGE OR SPILLAGE IF SAFE TO DO SO. DO NOT LET PRODUCT ENTER DRAINS. |
| METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP | PICK UP AND ARRANGE DISPOSAL WITHOUT CREATING DUST. SWEEP UP AND SHOVEL. KEEP IN SUITABLE, CLOSED CONTAINERS FOR DISPOSAL. |
| REFERENCE TO OTHER SECTIONS | FOR DISPOSAL SEE SECTION 13. |

SECTION 7. HANDLING AND STORAGE

| | |
|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PRECAUTIONS FOR SAFE HANDLING | AVOID FORMATION OF DUST AND AEROSOLS.FURTHER PROCESSING OF SOLID MATERIALS MAY RESULT IN THE FORMATION OF COMBUSTIBLE DUSTS. THE POTENTIAL FOR COMBUSTIBLE DUST FORMATION SHOULD BE TAKEN INTO CONSIDERATION BEFORE ADDITIONAL PROCESSING OCCURS. PROVIDE APPROPRIATE EXHAUST VENTILATION AT PLACES WHERE DUST IS FORMED. FOR PRECAUTIONS SEE SECTION 2.2. |
| CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES | KEEP CONTAINER TIGHTLY CLOSED IN A DRY AND WELL-VENTILATED PLACE. KEEP IN A DRY PLACE. Store at RT |
| SPECIFIC END USE(S) | APART FROM THE USES MENTIONED IN SECTION 1.2 NO OTHER SPECIFIC USES ARE STIPULATED |

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CONTROL PARAMETERS

COMPONENTS WITH WORKPLACE CONTROL PARAMETERS

CONTAINS NO SUBSTANCES WITH OCCUPATIONAL EXPOSURE LIMIT VALUES.

EXPOSURE CONTROLS

APPROPRIATE ENGINEERING CONTROLS HANDLE IN ACCORDANCE WITH GOOD INDUSTRIAL HYGIENE AND SAFETY PRACTICE. WASH HANDS BEFORE BREAKS AND AT THE END OF WORKDAY.

PERSONAL PROTECTIVE EQUIPMENT

EYE/FACE PROTECTION SAFETY GLASSES WITH SIDE-SHIELDS CONFORMING TO EN166 USE EQUIPMENT FOR EYE PROTECTION TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR EN 166(EU).

SKIN PROTECTION HANDLE WITH GLOVES. GLOVES MUST BE INSPECTED PRIOR TO USE. USE PROPER GLOVE REMOVAL TECHNIQUE (WITHOUT TOUCHING GLOVE'S OUTER SURFACE) TO AVOID SKIN CONTACT WITH THIS PRODUCT. DISPOSE OF CONTAMINATED GLOVES AFTER USE IN ACCORDANCE WITH APPLICABLE LAWS AND GOOD LABORATORY PRACTICES. WASH AND DRY HANDS.

FULL CONTACT

MATERIAL: NITRILE RUBBER
MINIMUM LAYER THICKNESS: 0.11 MM
BREAK THROUGH TIME: 480 MIN
MATERIAL TESTED:DERMATRIL (KCL 740, SIZE M)

SPLASH CONTACT

MATERIAL: NITRILE RUBBER
MINIMUM LAYER THICKNESS: 0.11 MM
BREAK THROUGH TIME: 480 MIN
MATERIAL TESTED:DERMATRIL (KCL 740, SIZE M)

IF USED IN SOLUTION, OR MIXED WITH OTHER SUBSTANCES, AND UNDER CONDITIONS WHICH DIFFER FROM EN 374, CONTACT THE SUPPLIER OF THE CE APPROVED GLOVES. THIS RECOMMENDATION IS ADVISORY ONLY AND MUST BE EVALUATED BY AN INDUSTRIAL HYGIENIST AND SAFETY OFFICER FAMILIAR WITH THE SPECIFIC SITUATION OF ANTICIPATED USE BY OUR CUSTOMERS. IT SHOULD NOT BE CONSTRUED AS OFFERING AN APPROVAL FOR ANY SPECIFIC USE SCENARIO.

BODY PROTECTION

IMPERVIOUS CLOTHING, THE TYPE OF PROTECTIVE EQUIPMENT MUST BE SELECTED ACCORDING TO THE CONCENTRATION AND AMOUNT OF THE DANGEROUS SUBSTANCE AT THE SPECIFIC WORKPLACE.

| | |
|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RESPIRATORY PROTECTION | 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. USE RESPIRATORS AND COMPONENTS TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR CEN (EU). |
| CONTROL OF ENVIRONMENTAL EXPOSURE | PREVENT FURTHER LEAKAGE OR SPILLAGE IF SAFE TO DO SO. DO NOT LET PRODUCT ENTER DRAINS. |

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

| | |
|----------------------------------------------|-----------------------|
| APPEARANCE | Brown to black powder |
| ODOUR | NO DATA AVAILABLE |
| ODOUR THRESHOLD | NO DATA AVAILABLE |
| PH | NO DATA AVAILABLE |
| MELTING POINT/FREEZING POINT | >300 °C |
| INITIAL BOILING POINT AND BOILING RANGE | |
| FLASH POINT | |
| EVAPORATION RATE | NO DATA AVAILABLE |
| FLAMMABILITY (SOLID, GAS) | NO DATA AVAILABLE |
| UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS | NO DATA AVAILABLE |
| VAPOUR PRESSURE | NO DATA AVAILABLE |
| VAPOUR DENSITY | NO DATA AVAILABLE |
| RELATIVE DENSITY | |
| WATER SOLUBILITY | NO DATA AVAILABLE |
| PARTITION COEFFICIENT: N- OCTANOL/WATER | NO DATA AVAILABLE |
| AUTO-IGNITION TEMPERATURE | NO DATA AVAILABLE |
| DECOMPOSITION TEMPERATURE | NO DATA AVAILABLE |
| VISCOSITY | NO DATA AVAILABLE |
| EXPLOSIVE PROPERTIES | NO DATA AVAILABLE |
| OXIDIZING PROPERTIES | NO DATA AVAILABLE |

OTHER SAFETY INFORMATION NO DATA AVAILABLE

SECTION 10. STABILITY AND REACTIVITY

| | |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| REACTIVITY | NO DATA AVAILABLE |
| CHEMICAL STABILITY | STABLE UNDER RECOMMENDED STORAGE CONDITIONS. |
| POSSIBILITY OF HAZARDOUS REACTIONS | NO DATA AVAILABLE |
| CONDITIONS TO AVOID | NO DATA AVAILABLE |
| INCOMPATIBLE MATERIALS | STRONG OXIDIZING AGENTS |
| HAZARDOUS DECOMPOSITION PRODUCTS | HAZARDOUS DECOMPOSITION PRODUCTS FORMED UNDER FIRE CONDITIONS. - CARBON OXIDES, NITROGEN OXIDES (NOX), SULPHUR OXIDES, SODIUM OXIDES OTHER DECOMPOSITION PRODUCTS - NO DATA AVAILABLE IN THE EVENT OF FIRE: SEE SECTION 5 |

SECTION 11. TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

| | |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| ACUTE TOXICITY | LD50 ORAL - RAT - 6,200 MG/KG INHALATION: NO DATA AVAILABLE DERMAL: NO DATA AVAILABLE NO DATA AVAILABLE |
| SKIN CORROSION/IRRITATION | NO DATA AVAILABLE |
| SERIOUS EYE DAMAGE/EYE IRRITATION | NO DATA AVAILABLE |
| RESPIRATORY OR SKIN SENSITISATION | NO DATA AVAILABLE |
| GERM CELL MUTAGENICITY | RAT UNSCHEDULED DNA SYNTHESIS |
| CARCINOGENICITY | |

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.

POSSIBLE HUMAN CARCINOGEN

IARC: 2B - GROUP 2B: POSSIBLY CARCINOGENIC TO HUMANS

NTP: NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS GREATER THAN OR EQUAL TO 0.1% IS IDENTIFIED AS A KNOWN OR ANTICIPATED CARCINOGEN BY NTP.

OSHA: NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS GREATER THAN OR EQUAL TO 0.1% IS ON OSHA S LIST OF REGULATED CARCINOGENS.

REPRODUCTIVE TOXICITY EXPERIMENTS HAVE SHOWN REPRODUCTIVE TOXICITY EFFECTS ON LABORATORY ANIMALS.

SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE NO DATA AVAILABLE

SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE NO DATA AVAILABLE

ASPIRATION HAZARD NO DATA AVAILABLE

ADDITIONAL INFORMATION RTECS: QJ6475000

TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.

LIVER - IRREGULARITIES - BASED ON HUMAN EVIDENCE

SECTION 12. ECOLOGICAL INFORMATION

TOXICITY
TOXICITY TO FISH LC50 - ORYZIAS LATIPES - > 1,000 MG/L - 48 H

PERSISTENCE AND DEGRADABILITY NO DATA AVAILABLE

BIOACCUMULATIVE POTENTIAL NO DATA AVAILABLE

MOBILITY IN SOIL NO DATA AVAILABLE

**RESULTS OF PBT AND
VPVB ASSESSMENT**

PBT/VPVB ASSESSMENT NOT AVAILABLE AS
CHEMICAL SAFETY ASSESSMENT NOT
REQUIRED/NOT CONDUCTED

OTHER ADVERSE EFFECTS NO DATA AVAILABLE

SECTION 13. DISPOSAL CONSIDERATIONS

WASTE TREATMENT METHODS

PRODUCT

OFFER SURPLUS AND NON-RECYCLABLE SOLUTIONS TO A LICENSED DISPOSAL COMPANY. CONTACT A LICENSED PROFESSIONAL WASTE DISPOSAL SERVICE TO DISPOSE OF THIS MATERIAL. DISSOLVE OR MIX THE MATERIAL WITH A COMBUSTIBLE SOLVENT AND BURN IN A CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER.

**CONTAMINATED
PACKAGING**

DISPOSE OF AS UNUSED PRODUCT.

SECTION 14. TRANSPORT INFORMATION

DOT (US)

PROPER SHIPPING NAME: ENVIRONMENTALLY HAZARDOUS SUBSTANCES,
SOLID, N.O.S. (Trypan blue)
UN NUMBER: 3077
CLASS: 9
PACKING GROUP: III
REPORTABLE QUANTITY (RQ): 10 LBS
POISON INHALATION HAZARD: NO

IMDG

NOT DANGEROUS GOODS

IATA

NOT DANGEROUS GOODS

SECTION 15. REGULATORY INFORMATION

SARA 302 COMPONENTS

NO CHEMICALS IN THIS MATERIAL ARE SUBJECT TO THE REPORTING REQUIREMENTS OF SARA TITLE III, SECTION 302.

SARA 313 COMPONENTS

THE FOLLOWING COMPONENTS ARE SUBJECT TO REPORTING LEVELS ESTABLISHED BY SARA TITLE III, SECTION 313:

| | CAS-NO. | REVISION DATE |
|---------------------------------------------------------------------------------------------------------------------------------------|---------|---------------|
| TETRASODIUM 3,3"-[(3,3"- DIMETHYL[1,1"-BIPHENYL]-4,4"- DIYL)BIS(AZO)]BIS[5-AMINO-4- HYDROXYNAPHTHALENE-2,7- DISULPHONATE] | 72-57-1 | 07-01-2007 |

SARA 311/312 HAZARDS

CHRONIC HEALTH HAZARD

MASSACHUSETTS RIGHT TO KNOW COMPONENTS

NO COMPONENTS ARE SUBJECT TO THE MASSACHUSETTS RIGHT TO KNOW ACT

PENNSYLVANIA RIGHT TO KNOW COMPONENTS

| | CAS-NO. | REVISION DATE |
|--------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------|
| TETRASODIUM 3,3"-[(3,3"- DIMETHYL[1,1"- BIPHENYL]-4,4"- DIYL)BIS(AZO)]BIS[5-AMINO- 4-HYDROXYNAPHTHALENE- 2,7- DISULPHONATE] | 72-57-1 | 07-01-2007 |

SECTION 16. OTHER INFORMATION

FULL TEXT OF H-STATEMENTS REFERRED TO UNDER SECTIONS 2 AND 3.
H350 MAY CAUSE CANCER.

MSDS LEGEND

| | |
|--------|-------------------------------------------------------------|
| MW: | MOLECULAR WEIGHT |
| MF: | MOLECULAR FORMULA |
| VOC: | VOLATILE ORGANIC COMPOUNDS |
| ACGIH: | AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGINISTS |
| CAS: | CHEMICAL ABSTRACTS SERIVE REGISTRY NUMBER |
| OSHA: | OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION |
| PEL: | PERMISSIBLE EXPOSURE LIMIT (OSHA) |
| TLV: | THRESHOLD LIMIT VALUE (ACGIH) |

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