

MATERIAL SAFETY DATA SHEET

MSDS No. 09612801
Issue Date: 96/04/03

IDENTITY Direct Bilirubin V Buffer

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURER'S NAME : Wako Pure Chemical Industries, Ltd.
ADDRESS : 1-2, Doshomachi 3-Chome, Chuo-ku, Osaka, 541, Japan
(Wako Chemicals USA, Inc. : 1600 Bellwood Road, Richmond, VA 23237, U.S.A.)
TELEPHONE NUMBER FOR INFORMATION : (800)992-9256 (Wako Chemicals USA, Inc.)
EMERGENCY TELEPHONE NUMBER : (800)424-9300 (CHEMTREC)

2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS NUMBER	CONTENT
Sodium hydroxide①	1310-73-2	0.18%
Sodium benzoate②	532-32-1	0.15%
l-Tartaric acid③	87-69-4	1.5%
Pyrazole④	288-13-1	0.2%
Hydroxylamine hydrochloride⑤	5470-11-1	0.1%
Sodium chloride⑥	7647-14-5	0.6%
Hydroxyethane bis(phosphonic acid)⑦	2809-21-4	0.2%
Water⑧	7732-18-5	95.6%

SYNONYMS : ①= Caustic soda, Sodium hydrate, Soda lye
③= [R-(R*,R*)]-2,3-Dihydroxybutanedioic acid, Ordinary tartaric acid
④= 1,2-Diazole
⑥= Salt, Common salt
⑦= (1-Hydroxyethylidene)bisphosphonic acid, Etidronic acid
⑧= Hydrogen oxide

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW :

Colorless clear liquid, odorless
Severe irritation of eyes and skin. May be harmful if inhaled and ingested.
Cause severe respiratory irritation if inhaled. Ingestion can result in serious delayed effects.

POTENTIAL HEALTH EFFECTS :

ROUTE OF ENTRY : Inhalation; Yes, Skin; Yes, Ingestion; Yes

EYE CONTACT: Vapors may irritate severely and cause pain, tearing, red-
ding, swelling and itching of the eyes.

SKIN CONTACT: Severely irritate the skin and cause skin rash(dermatitis).

SKIN ABSORPTION: Prolonged exposure may result in the material being absorbed
through skin in harmful amounts.

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INHALATION: High vapor concentrations are irritating to the eyes, nose, throat and lungs. It may also cause headaches and dizziness. Excessive exposure may cause severe respiratory irritation as pulmonary edema.

INGESTION: May cause anorexia, headaches, bellyache, diarrhea, nausea, vomiting and fever. Small amount of this liquid may be drawn into the lungs by either swallowing or vomiting(pulmonary edema). This may cause severe and delayed health effects such as inflammation of the lungs and infection of the bronchi(bronchopneumonia). Prolonged exposure may cause blood trouble. May cause central nervous system effects.

CARCINOGENICITY : NTP; Not listed, IARC; Not listed, OSHA; Not listed

4. FIRST AID

EYE CONTACT: Remove any contact lenses at once. Flush eyes well with flooding amounts of running water for at least 15 minutes. Assure adequate flushing by separating the eyelids with sterile fingers. If irritation persists, transport to a hospital immediately.

SKIN CONTACT: Remove contaminated clothes and shoes, rinse skin with plenty of water or shower. Use soap to help assure removal. If irritation persists, transport to a hospital immediately.

INHALATION : Move victim to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, administer artificial respiration. Maintain normal body temperature with a blanket. If irritation persists, transport to a hospital immediately.

INGESTION : Rinse mouth, give plenty of water or milk to dilute the substance and induce vomiting. Never give anything by mouth to an unconscious person. Transport to a hospital immediately.

5. FIRE FIGHTING MEASURES

FLASH POINT : Not available
FLAMMABLE(EXPLOSIVE) LIMITS : Not available
EXTINGUISHING MEDIA : Carbon dioxide, dry chemical powder, foam, water
FIRE & EXPLOSION HAZARDS : Toxic, irritating fumes or smoke may be emitted.
FIRE FIGHTING INSTRUCTIONS : Firemen should wear normal protective equipment(full bunker gear)and positive-pressure self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Do not touch spilled material without suitable protection. Take up spilled material with ashes or other absorbents. After material is completely picked up, wash the spill site with soap and water and ventilate the area. During the cleanup, wear protective clothes, gloves and goggles. Put all wastes in a plastic bag for disposal and seal it tightly. Remove, clean, or dispose of contaminated clothing.

7. HANDLING AND STORAGE

For in vitro diagnostic use.
Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure. Handle material with suitable protection. Store away from sunlight in a cool(2~10°C= 35.6~50° F) well-ventilated dry place. Keep container tightly closed.
See also the indication described on label for handling and the package insert for further handling information.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS : Use exhaust ventilation to keep airborne concentrations below exposure limits. Use only with adequate ventilation.

VENTILATION : Local Exhaust ; Necessary, Mechanical(General) ; Necessary Special ; Closed system is recommended.

PERSONAL PROTECTION : Safety glasses(goggles), Chemical resistant gloves, Protective clothing, NIOSH/MSHA approved respirator

EXPOSURE GUIDELINE(S) :

- ①; OSHA Final Limits : TWA= 2mg/m³
ACGIH TLV(s) : STEL= 2mg/m³
- ②,③,④,⑤,⑥,⑦,⑧ ; None established

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR : Colorless clear liquid, odorless

MELTING POINT : Not available

BOILING POINT : Not available

SPECIFIC GRAVITY : Not available

SOLUBILITY IN WATER : Miscible

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY : This material is stable under normal and anticipated ambient storage and handling conditions.

CONDITION TO AVOID : Sunlight, heat

INCOMPATIBILITY(MATERIAL TO AVOID) : Oxidizers, reducing agents, strong acids, alkalis, water-reactive materials(Alkali metals etc.)

HAZARDOUS DECOMPOSITION PRODUCTS : Carbon monoxide, nitrogen oxides, phosphor oxides, sodium compounds, chlorine compounds and hydrogen chloride gas may be formed.

HAZARDOUS POLYMERIZATION : Will not occur.

11. TOXICOLOGICAL INFORMATION

RTECS NUMBER : Not listed as the mixture.

- ①= WB4900000, ②= DH6650000, ③= WW7875000, ④= UQ4900000
- ⑤= NC3675000, ⑥= VZ4725000, ⑦= SZ8562100, ⑧= ZC0110000

ACUTE TOXICITY DATA :

Not available(Not listed in RTECS as the mixture)

①= LD₅₀(ipr,mouse): 40mg/kg(COREAF 257,791,63)

LDLo(oral,rabbit): 500mg/kg(AEPPAE 184,587,37)

②= LD₅₀(oral,rat): 4070mg/kg(JIHTAB 30,63,48)

③= LDLo(oral,rabbit): 5000mg/kg(IECHAD 15,628,23)

④= LD₅₀(oral,rat): 1010mg/kg(EXPEAM 25,816,69)

⑤= LD₅₀(oral,mouse): 408mg/kg(APTOA6 6,285,50)

⑥= LD₅₀(oral,rat): 3000mg/kg(TXAPA9 20,57,71)

LD₅₀(ivn,mouse): 645mg/kg(ARZNAD 7,445,57)

TDLo(oral,human): 12357mg/kg/23D-C; Vascular (AJDDAL 21,180,54)

⑦= LD₅₀(oral,mouse): 1800mg/kg(ACIEAY 14,94,75)

⑧= TDLo(oral,infant): 333mg/kg; Behavioral;

Gastrointestinal; Nutritional and Gross

Metabolic(ADCHAK 54,551,79)

IRRITATION DATA :

Not available(Not listed in RTECS as the mixture)

①= Eye; rabbit; 50 μ g/24H; Severe(28ZPAK -,7,72)

Skin; rabbit; 500mg/24H; Severe(28ZPAK -,7,72)

⑥= Eye; rabbit; 10mg; Moderate(TXAPA9 55,501,80)

Skin; rabbit; 50mg/24H; Mild(BIOFX* 20-3/71)

MUTATION DATA : Not available(Not listed in RTECS as the mixture)
①= Cytogenetic analysis; grasshopper-parenteral; 20mg(NULSAK 9,119,66)
②= Cytogenetic analysis; hamster: lung; 1gm/L (ATSUDG 4,41,80)
⑤= Cytogenetic analysis; grasshopper-parenteral; 2500 μ g(PISCAD 59(Pt 3),480,72)
⑥= Cytogenetic analysis; hamster: lung; 7500mg/L (GMCRDC 27,95,81)

REPRODUCTIVE EFFECTS DATA : Not available(Not listed in RTECS as the mixture)
②= TDLo(orl, rat): 44gm/kg(1-22D preg); Specific Developmental Abnormalities(ESKHA5 (96),47,78)
④= TDLo(orl, rat): 100mg/kg(9D preg); Specific Developmental Abnormalities(RCOCB8 26,65,79)
⑥= TDLo(orl, rat): 145gm/kg(7D pre/1-22D preg); Effects on Newborn(JCINAO 41,710,62)
⑦= TDLo(ipr, mouse): 40mg/kg(7D preg)(SIGAAE 50,879,87)

TUMORIGENIC DATA : Not available(Not listed in RTECS as the mixture and as the components)

12. ECOLOGICAL INFORMATION

①; TLm(mosquito fish): 125ppm/96hr(fresh water)

13. DISPOSAL CONSIDERATION

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber in accordance with all applicable regulations. Any disposal must be in compliance with local, state, and federal laws and regulations(contact local or state environmental agency specific rules).

14. TRANSPORT INFORMATION

DOT(Department of Transportation) : Not a Hazardous Material for DOT shipping as the mixture.

- ①; PROPER SHIPPING NAME : Sodium hydroxide, solid
HAZARD CLASS : Corrosive material (Class 8)
IDENTIFICATION NUMBER : UN1823
- ⑤; PROPER SHIPPING NAME : Corrosive solids, n.o.s.
HAZARD CLASS : Corrosive material (Class 8)
IDENTIFICATION NUMBER : UN1759

15. REGULATORY INFORMATION

- ①; EPA: CERCLA RQ= 1000 lb
CWA/311 Haz., NIOSH Recommend. Subst., CERCLA Haz. Subst., DOT Haz. Mat., Penn. Haz. Subst. List
- ②; CAA/111 Volat. Org. Comp.
- ⑤; TSCA CAIRs, TSCA CHIPs
- ③,④,⑥,⑦,⑧; Not listed

EPA TSCA Inventory : ①,②,③,④,⑤,⑥,⑦,⑧= Listed,
EINECS Number : ①= 2151855, ②= 2085345, ③= 2017660, ④= 2060171
⑤= 2267982, ⑥= 2315983, ⑦= 2205528, ⑧= 2317912

16. OTHER INFORMATION

①; NFPA HR= health- 3, flam.- 0, react.- 1, ~~w~~, alkali
⑤; HMIS HR= health- 1, flam.- 0, react.- 0
⑥; HMIS HR= health- 1, flam.- 0, react.- 0

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