

MATERIAL SAFETY DATA SHEET

MSDS No. 09612901  
Issue Date: 96/04/03

IDENTITY Direct Bilirubin V Vanadate

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	0.1%
Hydroxyethane bis(phosphonic acid)②	2809-21-4	0.2%
Sodium dihydrogenphosphate③	7758-79-4	0.1%
Sodium metavanadate④	13718-26-8	0.05%
Water⑤	7732-18-5	99.6%

SYNONYMS : ①= Caustic soda, Sodium hydrate, Soda lye  
②= (1-Hydroxyethylidene)bisphosphonic acid, Etidronic acid  
③= Sodium phosphate, dibasic, Disodium orthophosphate  
④= Sodium vanadate(V)  
⑤= Hydrogen oxide

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW :

Nearly colorless clear liquid, odorless

Irritation of eyes and skin. May be harmful if inhaled and ingested.

POTENTIAL HEALTH EFFECTS :

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

EYE CONTACT: Vapors may irritate and cause pain, tearing, redding, swelling and itching of the eyes.

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

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

INHALATION: High vapor concentrations are irritating to the eyes, nose, throat and lungs. It may also cause headaches and dizziness.

INGESTION: May cause anorexia, headaches, bellyache, diarrhea, nausea, vomiting and fever.

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

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#### 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, consult a physician.

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

**INHALATION :** Move victim to fresh air. If breathing is difficult, give oxygen. If irritation persists, consult a physician.

**INGESTION :** Rinse mouth, give plenty of water or milk to dilute the substance and induce vomiting. Consult a physician.

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#### 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.

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#### 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.

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#### 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( 2~35°C= 35.6~95° 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.

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#### 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) ; Recommended

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

**EXPOSURE GUIDELINE(S) :**

①; OSHA Final Limits : TWA= 2mg/m<sup>3</sup>  
ACGIH TLV(s) : STEL= 2mg/m<sup>3</sup>

②,③,④,⑤; None established

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR : Nearly colorless clear liquid, odorless  
MELTING POINT : Not available  
BOILING POINT : Not available  
SPECIFIC GRAVITY : Not available  
SOLUBILITY IN WATER : Miscible

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## 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, acids, alkalis, water-reactive materials(Alkali metals etc.)  
HAZARDOUS DECOMPOSITION PRODUCTS : Carbon monoxide, nitrogen oxides, phosphor oxides and sodium compounds may be formed.  
HAZARDOUS POLYMERIZATION : Will not occur.

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## 11. TOXICOLOGICAL INFORMATION

RTECS NUMBER : Not listed as the mixture.

①= WB4900000, ②= SZ8562100, ③= WC4500000 ④= YW1050000  
⑤= ZC0110000

ACUTE TOXICITY DATA : Not available(Not listed in RTECS as the mixture)  
①= LD50(ipr,mouse): 40mg/kg(COREAF 257,791,63)  
LDLo(ori,rabbit): 500mg/kg(AEPPAE 184,587,37)  
②= LD50(ori,mouse): 1800mg/kg(ACIEAY 14,94,75)  
③= LD50(ori, rat): 17gm/kg(28ZPAK -,16,72)  
④= LD50(ori, rat): 98mg/kg; Behavioral; Lungs, Thorax or Respiration; Gastrointestinal (TOLED5 23,227,84)  
⑤= TDLo(ori, 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  $\mu$ g/24H; Severe(28ZPAK -,7,72)  
Skin; rabbit; 500mg/24H; Severe(28ZPAK -,7,72)  
③= Eye; rabbit; 500mg/24H; Mild(28ZPAK -,16,72)  
Skin; rabbit; 500mg/24H; Mild(28ZPAK -,16,72)

MUTATION DATA : Not available(Not listed in RTECS as the mixture)  
①= Cytogenetic analysis; grasshopper-parenteral; 20mg(NULSAK 9,119,66)

REPRODUCTIVE EFFECTS DATA : Not available(Not listed in RTECS as the mixture)  
②= 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)

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## 12. ECOLOGICAL INFORMATION

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

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### 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).

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### 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 : Toxic solids, inorganic, n.o.s.  
HAZARD CLASS : Toxic materials (Class 6.1)  
IDENTIFICATION NUMBER : UN3288
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### 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
- ③; EPA: CERCLA RQ= 5000 lb  
CWA/311 Haz., CERCLA Haz. Subst., DOT Haz. Subst. and Rep. Quant., Mass. Subst. List, New Jers. RTK Haz. Subst. List, Penn. Haz. Subst. List
- ④; DOT Haz. Mat., Canad. WHMIS IDL 1% conc., New Jers. RTK Haz. Subst. List
- ②, ⑤; Not listed

EPA TSCA Inventory : ①, ②, ③, ④, ⑤ = Listed,  
EINECS Number : ① = 2151855, ② = 2205528, ③ = 2314487, ④ = 2372727  
⑤ = 2317912

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### 16. OTHER INFORMATION

- ①; NFPA HR= health- 3, flam.- 0, react.- 1, W, alkali
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This product is a chemical substance and is intended to be used by persons having chemical knowledge and skill, as their own discretion and risk. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Wako shall not be held liable for any damage resulting from handling or from contact with the above material.