

MATERIAL SAFETY DATA SHEET

MSDS No. 09508802
 Revised Date: 96/07/25

IDENTITY Autokit CH50

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
[1] Liposome :		
Liposome (contains G6PDH①)	9001-40-5	
Tris(hydroxymethyl)aminomethane②	77-86-1	1.2%
Sodium chloride③	7647-14-5	0.5%
Hydrochloric acid④	7647-01-0	0.2%
[2] Substrate :		
G6P⑤		32%
NAD⑥	53-84-9	28%
Anti-DNP antibody, goat⑦		
Lactose monohydrate⑧	10039-26-6	38%
Sodium hydroxide⑨	1310-73-2	2%
[3] : Diluent		
10mM Malate buffer(pH 5.5)		

SYNONYMS : ①= Glucose-6-phosphate dehydrogenase
 ②= Tris, 2-Amino-2-hydroxymethyl-1,3-propanediol
 ③= Salt, Common salt
 ④= Hydrogen chloride
 ⑤= Glucose-6-phosphate
 ⑥= Nicotinamide-adenine dinucleotide
 ⑦= Anti-dinitrophenyl antibody, goat
 ⑧= 4-o-β-D-Galactopyranosyl-D-glucose monohydrate
 ⑨= Sodium hydrate, Caustic soda

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW :

- [1] ; Nearly colorless clear liquid, odorless
- [2] ; White lyophilized powder, odorless
- [3] ; 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, reddening, 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; ④= Not Classifiable as to Carcinogenicity to Humans (Group 3), 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, 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.

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. Do not freeze. Keep container tightly closed.

See 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) ; Recommended

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

EXPOSURE GUIDELINE(S) :

- ④; OSHA Final Limits : (c)5ppm, (c)7mg/m³
ACGIH TLV(s) : STEL= 5ppm, 7.5mg/m³
- ⑨; OSHA Final Limits : TWA= 2mg/m³
ACGIH TLV(s) : STEL= 2mg/m³
- ①,②,③,⑤,⑥,⑦,⑧; None established

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR : [1] ; Nearly colorless clear liquid, odorless
[2] ; White lyophilized powder, odorless
[3] ; Colorless clear liquid, odorless

MELTING POINT : Not available

BOILING POINT : Not available

SPECIFIC GRAVITY : Not available

SOLUBILITY IN WATER : [1] and [3] ; Miscible
[2] ; Soluble

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

HAZARDOUS DECOMPOSITION PRODUCTS : Carbon monoxide, nitrogen oxides, sulfur oxides, phosphor oxides and hydrogen chloride may be formed.

HAZARDOUS POLYMERIZATION : Will not occur.

11. TOXICOLOGICAL INFORMATION

RTECS NUMBER : Not listed as the mixture.

②= TY2900000, ③= VZ4725000, ④= MW4025000, ⑥= UU3450000

⑧(as Anhydrous)= OD9625000, ⑨= WB4900000

①,⑤,⑦= Not listed

ACUTE TOXICITY DATA : Not available(Not listed in RTECS as the mixture)

②= LD50(orl, rat): 5900mg/kg(BCFAAI 110,653,71)

③= LD50(orl, rat): 3000mg/kg(TXAPA9 20,57,71)

TDL_o(orl, human): 12357mg/kg/23D-C
(AJDDAL 21,180,54)

④= LD50(orl, rabbit): 900mg/kg(BIZEA2 134,437,23)

LCL_o(ihl, human): 130ppm/30M(29ZWAE -,207,68)

⑥= LDLo(ivn, dog): 1500mg/kg(HBAMAK 4,1289,38)

⑨= LDLo(orl, rabbit): 500mg/kg(AEPPAE 184,587,37)

IRRITATION DATA :

Not available(Not listed in RTECS as the mixture)

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

Eye; rabbit; 10mg; Moderate(TXAPA9 55,591,80)

④= Eye; rabbit; 100mg rinse; Mild

(TXCYAC 23,281,82)

⑨= Skin; rabbit; 500mg/24H; Severe(28ZPAK -,7,72)

Eye; rabbit; 500 μg/24H; Severe(28ZPAK -,7,72)

MUTATION DATA : Not available(Not listed in RTECS as the mixture)
③= DNA inhibition:human;fibroblast; 125mmol/L
(CNREA8 46,713,86)
④= Cytogenetic analysis; grasshopper-parenteral;
20mg(NULSAK 9,119,66)
⑥= Microbial mutation without S9; S.typhimurium;
100 µg/plate(ABCHA6 45,327,81)
⑨= Cytogenetic analysis; grasshopper-parenteral;
20mg(NULSAK 9,119,66)

REPRODUCTIVE EFFECTS DATA : Not available(Not listed in RTECS as the mixture)
③= TDLo(oral,rat): 145gm/kg(7D pre/1-22D preg);
Effects on newborn(JCINAO 41,710,62)
④= TCLo(ihl,rat): 450mg/m3/1H(1D preg); Effects
on embryo or fetus; Specific developmental
abnormalities(AKGIAO 53(6),69,77)
⑥= TDLo(oral,rat): 375mg/kg(4-18D preg):Specific
developmental abnormalities(TJADAB 4,497,71)

TUMORIGENIC DATA : Not available(Not listed in RTECS as the mixture)
⑧= TDLo(scu,mouse): 1000gm/kg/29W-C;Tumorigenic;
(GANNA2 46,363,55)

12. ECOLOGICAL INFORMATION

Not available

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 : Hydrochloric acid, solution
HAZARD CLASS : Corrosive material (Class 8)
IDENTIFICATION NUMBER : UN1787

IATA : Not Restricted as the mixture.

[1] ; PROPER SHIPPING NAME : Hydrochloric acid solution
CLASS or DIVISION : Corrosives (Class 8)
UN or ID No. : UN1787

15. REGULATORY INFORMATION

- ④; EPA: CERCLA RQ= 5,000 lb,
EPCRA section 313 de minimis concentration is 1.0%
OSHA: TQ= 5,000 lb
CAA: ACCIDENTAL RELEASE PREVENTION SUBSTANCE; TQ= 5,000 lb
CWA/311 Haz., CAA/112 1990 Amend., CAA/112(r) Acci. Release Pre.
Subst., CERCLA Haz. Subst., SARA III/313 Tox. Chem., DEA Prec. and Es-
sen. Chem., DOT Haz. Mat., DOT Haz. Subst. and Rep. Quant., OSHA Highly
Haz. Chem., Canad. WHMIS IDL 1% conc., Mass. Subst. List, New Jers. RTK
Haz. Subst. List, Penn. Haz. Subst. List
- ⑨; EPA: CERCLA RQ= 1,000lb
CWA/311 Haz., NIOSH Recommend. Subst., CERCLA Haz. Subst., DOT Haz.
Mat., DOT Haz. Subst. and Rep. Quant., Canad. WHMIS IDL 1% conc., Mass.
Subst. List, New Jers. RTK Haz. Subst. List

EPA TSCA Chemical Inventory : ②,③,④,⑥,⑨= Listed

⑧(as Anhydrous)= Listed

①,⑤,⑦= Not listed

Use of this product must be restricted to re-
search or analysis for the development of a
product, in accordance with the Act.

EINECS Number : ②= 2010644, ③= 2315983, ④= 2315957

⑥= 2001844, ⑨= 2151855

⑧(as Anhydrous)= 2005592

①,⑤,⑦= Not listed

16. OTHER INFORMATION

③; EPA GENETOX PROGRAM 1986, Inconclusive: Mammalian micronucleus

④; EPA GENETOX PROGRAM 1986, Negative: Cell transform. -SA7/SHE

⑨; EPA GENETOX PROGRAM 1986, Negative: Cell transform. -SA7/SHE

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.

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