

MATERIAL SAFETY DATA SHEET

MSDS No. 094181E1

CODE: 99-9090

Revised Date: 2000/05/09

IDENTITY Autokit Glucose

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : Autokit Glucose**MANUFACTURER** : Wako Pure Chemical Industries, Ltd.**SUPPLIER (In JAPAN)** : Wako Pure Chemical Industries, Ltd.**ADDRESS** : 1-2, Doshomachi 3-chome, Chuo-ku, Osaka, 540-8605, Japan**TELEPHONE NUMBER & EMERGENCY TELEPHONE NUMBER**: (06) 6203-3741**SUPPLIER (In U.S.A.)** : Wako Chemicals USA, Inc.**ADDRESS** : 1600 Bellwood Road, Richmond, VA 23237, U.S.A.**TELEPHONE NUMBER** : (800) 992-9256**EMERGENCY TELEPHONE NUMBER** : (800) 424-9300 (CHEMTREC)**SUPPLIER (In EUROPE)** : Wako Chemicals GmbH, Germany**ADDRESS** : Nissanstrasse 2, D-41468 Neuss, GERMANY**TELEPHONE NUMBER & EMERGENCY TELEPHONE NUMBER** : (02131) 311-0

2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS NUMBER	CONTENT
[1] Buffer Solution ; 60mM Phosphate buffer (pH 7.1) Phenol ①	108-95-2	0.05%
[2] Color Reagent ; Mutarotase ②	9031-76-9	
Glucose oxidase ③	9001-37-0	
Peroxidase ④	9003-99-0	
4-Aminoantipyrine ⑤	83-07-8	11.3%
Ascorbate oxidase ⑥	9029-44-1	
[3] Standard I ; Glucose ⑦	50-99-7	0.2%
[4] Standard II ; Glucose ⑦	50-99-7	0.5%

SYNONYMS : ①= Carboic acid, Hydroxybenzene

②= Aldose 1-epimerase, Aldose mutarotase

③= β -D-Glucose oxidase, Aerodehydrogenase, GOD

④= Myeloperoxidase, Lactoperoxidase, POD

⑤= 4-Amino-1,2-dihydro-1,5-dimethyl-2-phenyl-3H-pyrazol-3-one,
AAP

⑥= Ascorbase, Ascorbate dehydrogenase, AOD

⑦= D-Glucose, Dextrose, Blood sugar, Grape sugar

FORMULA : ①= C₆H₅OH , ⑤= C₁₁H₁₃N₃O , ⑦= C₆H₁₂O₆

②, ③, ④, ⑥= Not available

MOLECULAR WEIGHT : ①= 94.12, ⑤= 203.27, ⑦= 180.16

②, ③, ④, ⑥= Not available

TSCA INVENTORY : ①, ③, ④, ⑤, ⑦= Listed ②, ⑥= Not listed (See section 15)

EINECS No. : ①= 203-632-7, ②= 232-872-5, ③= 232-601-0, ④= 232-668-6, ⑤= 201-452-3,

⑥= 232-852-6, ⑦= 200-075-1

INDICATION OF DANGER : _____ , R _____

3. HAZARDS IDENTIFICATION

May be harmful if inhaled and ingested.

May cause eye and skin irritation.

①= NFPA HR= health- 3, flam.- 2, react.- 0

4. FIRST AID MEASURES

GENERAL ADVICE : Wash off immediately with soap and plenty of water. In the case of respirable dust and/or fumes, use self-contained breathing apparatus and dust impervious protective suit. Use personal protective equipment.

INHALATION : Move victim to fresh air. If breathing is difficult, give oxygen. 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.

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.

INGESTION : Rinse mouth, give plenty of water to dilute the substance. Never give anything by mouth to an unconscious person. Consult a physician.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA : Carbon dioxide, dry chemical powder, foam, water

FIRE & EXPLOSION HAZARDS :

[1] , [3] , [4] ; Toxic, irritating fumes or smoke may be emitted.

[2] ; Toxic, irritating dust or smoke may be emitted.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS : Firemen should wear normal protective equipment (full bunker gear) and positive-pressure self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS : Remove ignition sources and ventilate area. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid raising dust and avoid contact with skin and eyes.

ENVIRONMENTAL PRECAUTIONS : Prevent spills from entering sewers, watercourses or low areas.

METHODS FOR CLEAN UP : Do not touch spilled material without suitable protection (See section 8). 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. 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.

HANDLING : Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure. Handle material with suitable protection.

STORAGE : Store away from sunlight in a cool (2~10°C = 35.6~50° F) well-ventilated dry place. Keep container tightly closed.

See the package insert for further handling information.

INCOMPATIBLE PRODUCTS : Oxidizers, water-reactive materials(alkali metals etc.)

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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

VENTILATION : Local Exhaust ; Necessary, Mechanical(General) ; Recommended

CONTROL PARAMETER :

①= OSHA Final Limits ; TWA= 5ppm, 19mg/m³; skin designation

ACGIH TLV(s) ; TWA= 5ppm, 19mg/m³; skin notation

②, ③, ④, ⑤, ⑥, ⑦= None established

PERSONAL PROTECTION :

Respiratory protection ; NIOSH/MSHA approved respirator

Hand protection ; Chemical resistant gloves

Eye protection ; Safety glasses(goggles)

Skin protection ; Protective clothing

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE : [1] ; Colorless clear liquid
[2] ; Pale yellow lyophilized powder
[3] ; Colorless clear liquid
[4] ; Colorless clear liquid

ODOR : [1] ; Characteristic odor
[2] ; Odorless
[3] ; Odorless
[4] ; Odorless

pH : [1] ; 7.15, [2] , [3] , [4] ; Not available

BOILING POINT : Not available

MELTING POINT : Not available

FLASH POINT : Not available

FLAMMABILITY (solid, gas) : [1] , [3] , [4] ; _____ , [2] , Not available

DECOMPOSITION TEMPERATURE : Not available

EXPLOSIVE LIMITS : Not available

VAPOR PRESSURE : Not available

SPECIFIC GRAVITY : Not available

SOLUBILITY IN :

WATER ; [1] , [3] , [4] ; Miscible, [2] ; Soluble

log Po/w : ①= 1.46

10. STABILITY AND REACTIVITY

CONDITION TO AVOID : Sunlight, heat

INCOMPATIBILITY (MATERIAL TO AVOID) : Oxidizers, water-reactive materials(alkali metals etc.)

HAZARDOUS DECOMPOSITION PRODUCTS : Carbon monoxide and nitrogen oxides may be formed.

HAZARDOUS POLYMERIZATION : Will not occur.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY DATA : Not available as the mixture
①= LD50(oral,mouse): 270mg/kg(GISAA 38(8), 6, 73)
LC50(ihl,mouse): 177mg/kg(GISAA 41(6), 103, 76)
③= LD50(scu,mouse): 4500 μg/kg(85GDA 24(2), 302, 80)
⑤= LD50(oral,mouse): 800mg/kg(CCCCAK 47, 636, 82)
⑦= LD50(oral, rat): 25800mg/kg(85AIAL -, 39, 73)

IRRITATION DATA : Not available as the mixture
①= Eye ; rabbit; 5mg; Severe(UCDS** 1/6/66)
Skin; rabbit;500mg/24H; Severe(BIOFX** 27-4/73)

MUTATION DATA : Not available as the mixture
①= DNA inhibition; human:Hela cell; 1mmol/l(SAIGBL 16, 453, 74)
⑦= Microbial mutation without S9; S. typhimurium;
25mg/plate(NARHAD 12, 2127, 84)

REPRODUCTIVE EFFECTS DATA : Not available as the mixture
①= TDLo(oral, rat): 300mg/kg(6-15D preg); Effects
on fertility(NTIS** PB83-247726)
⑦= TDLo(ipr, hamster); 20gm/kg(6-18D preg); Specific
developmental abnormalities (eye, ear) (TJADAB 33, 74C, 86)

ADDITIONAL INFORMATION : NTP ; Not listed,
IARC ; ①= Not Classifiable as to Carcinogenicity to Humans
(Group 3)
OSHA; Not listed, ACGIH; Not listed
①; EPA GENETOX PROGRAM 1986, Negative: N-crassa-reversion
⑤; EPA GENETOX PROGRAM 1986, Negative; Histidine
reversion-Ames test
⑦; EPA GENETOX PROGRAM 1986, Negative; Sperm morphology-
mouse

12. ECOLOGICAL INFORMATION

BIODEGRADABILITY : Not available
BIOACCUMULATION POTENTIAL : Not available
AQUATIC TOXICITY : Not available
OTHER DATA : 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 country, local, state, and federal laws and regulations(contact country, local or state environmental agency specific rules).
USEPA(RCRA) hazardous waste No. : ①= U188

14. TRANSPORT INFORMATION

[1] ; IATA:

PROPER SHIPPING NAME ; Phenol solutions
CLASS or DIVISION ; Toxic substances. (Division 6.1)
UN or ID No. ; UN2821

DOT(Department of Transportation) :

PROPER SHIPPING NAME ; Phenol solutions
HAZARD CLASS ; Toxic materials (Class 6.1)
IDENTIFICATION NUMBER; UN2821

[2] [3] [4] ; IATA: Not Restricted

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

15. REGULATORY INFORMATION

US REGULATIONS :

- ①; TSCA/8(d) Heal. Saf. Data Rule, TSCA CHIPS, CWA/304 Water Qual. Crit., CWA/307 Prio. Poll., CWA/311 Haz., CAA/111 Volat. Org. Comp., CAA/112 1990 Amend., NIOSH Recommend. Subst., RCRA Haz., RCRA Haz. Cons. Groundwater Moni., RCRA First Third Wast., CERCLA Haz. Subst., SARA III /302 Extre. Haz. Subst., SARA III/313 Tox. Chem., SARA/110 Prio. List CERCLA Haz. Subst. (ATSDR), NTP Test. Prog., DOT Haz. Mat., DOT Haz. Subst. and Rep. Quant., Canad. WHMIS IDL 1% conc., Mass. Subst. List, New Jers. RTK Haz. Subst. List, Penn. Haz. Subst. List
EPA: CERCLA RQ= 1000lb, TPQ= 500/10000lb
EPCRA section 313de minimis concentration is 1.0%

③; New Jers. RTK Haz. Subst. List

②, ④, ⑤, ⑥, ⑦= Not listed

TSCA : Use of this product must be restricted to research or analysis for the development of a product in accordance with the Act.

EU REGULATIONS :

SYMBOL : _____

R-phrases : _____

S-phrases : _____

EC index No. : ①= 203-632-7, ②, ③, ④, ⑤, ⑥, ⑦= Not listed

16. OTHER INFORMATION

No specific notes

The above information is believed to be correct to be the best of our knowledge and information but does not purport to be all inclusive and shall be used only as a guide. This product is intended to be used by expert persons having chemical knowledge and skill, at their own discretion and risk and Wako shall not be held liable for any damage resulting from handling or from contact with the above material.

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