Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Human Chromogranin A EIA
Product number: YK070
Manufacturer: YANAIHARA INSTITUTE, INC.
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2. HAZARDS IDENTIFICATION

GHS classification
Classification of the substance or mixture 4), 7), 8)

Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (single exposure)	Category 1
Category 1 respiratory system	
Specific target organ toxicity (repeated exposure)	Category 1
Category 1 respiratory system	
Aquatic environmental toxicity/Chronical phase	Category 2

Pictograms

Signal word Danger

Hazard statements
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
H332 - Harmful if inhaled
H370 - Causes damage to the following organs: respiratory system
H372 -Causes damage to the following organs through prolonged or repeated exposure: respiratory system

H411 - Toxic to aquatic life with long lasting effects

Precautionary statements-(Prevention)

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dust/fumes/gas/mist/vapors/spray.
Wash face, hands and any exposed skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
Use personal protective equipment as required.

Precautionary statements-(Response)

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor/physician.
Call a POISON CENTER or doctor/physician if you feel unwell.
Wash contaminated clothing before reuse.

Precautionary statements-(Storage)

Store locked up.
Store in a well-ventilated place. Keep container tightly closed.

Precautionary statements-(Disposal)

Dispose of contents/container to an approved waste disposal plant.

Others

Other hazards　Not available

Other reagents may be harmful if inhaled and ingested.　May cause eye and skin irritation.

3. COMPOSITION, INFORMATION ON INGREDIENTS

Product Name	CAS Number
Human Chromogranin A EIA	None

Kit components:

No.	Component	Quantity	Chemical name	Wt%	CAS No.	Chemical Formula
1)	Antibody coated plate	1 plate	Plate coated with goat anti rabbit IgG antibody ①			
2)	CgA Standard	100 pmol	Synthetic human CgA(344-374) ②			
3)	Labeled antigen	30 ng/vial	Biotinylated human CgA(344-374) ③			
4)	Specific antibody	1 vial	Rabbit anti human CgA(344-374) antibody ④			
			EDTA2Na⑤	17.7%	6381-92-6	C10H14N2Na2O8.2H2O
5)	SA-HRP solution	12 mL	HRP labeled Streptavidin⑥			
6)	TMB Substrate	12 mL	3,3',5,5'-tetramethylbenzidine⑦	No Information	54827-17-7	C16H2ON2
7)	Stopping solution	12 mL	Sulfuric acid (1M) ⑧	9.69%	7664-93-9	H2SO4
8)	Buffer solution (Concentrated)	12 mL	Phosphate buffer with nonspecific reaction blocker ⑨			
			EDTA2Na⑤	3.7%	6381-92-6	C10H14N2Na2O8.2H2O
9)	Washing solution (Concentrated)	50 mL	Sodium chloride ⑩	18%	7647-14-5	NaCl
			Polyoxyethylene sorbitan monolaurate (Tween20) ⑪	1%	9005-64-5	C58H114O26
10)	Adhesive foil	3 sheets				

4. FIRST AID MEASURES

Inhalation: Immediately remove victim to fresh air. Consult a physician if necessary.

Eye contact: Immediately flush eyes with flooding amounts of running water for at least 15 minutes. Consult a physician if necessary.

Skin contact: Immediately remove contaminated clothes and shoes, flush skin with plenty of water or shower. Wash contaminated clothing and shoes. Consult a physician if necessary.

Ingestion: Immediately seek medical attention.

5. FIRE FIGHTING MEASURES

Flammable properties: Nonflammable

Extinguishing media: Foam, Carbon dioxide, dry chemical powder, soil, water

Firefighting instructions: May emit toxic fumes under fire conditions. Wear full fire fighting protective equipment including self-contained breathing apparatus. Do not contact to the components when extinguish fire.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Remove all ignition sources and ventilate. Wear suitable protective equipment. Avoid contact with skin and eyes. Keep off except persons concerned.

Environmental precautions: Prevent spills from entering sewers, watercourses or low area, and prevent from affecting environment.

Methods for Clean up: In case of spill of liquid material, take up or cover spilled material with

ashes or other incombustible absorbents, and put in a container to be sealed. After completely picked up, dispose. In case of spill of solid or powder material, prevent causing dust, sweep and collect, and put in a container to be sealed. Wash the spill site with water.

7. HANDLING AND STORAGE

Handling: Obtain a package insert before use.
Read all the cautions for safety in the package insert before use.
Avoid strong light.
Avoid contact, inhalation and swallow.
Use only in open air or ventilated area.
Prevent from entering eyes.
Ventilate the area to keep concentration in air below exposure limits.
Avoid inhalation of mist, vapor and spray of material.
Avoid contact with eyes, skin and clothing.
Do not smoke and eat while using this kit.
Wash hands thoroughly after handling.
Prevent from entering environment.
Handle materials with suitable protection.
Use suitable equipments.
Do not pipette by mouth.
Do not leak, overflow and scatter.
Do not fall down and damage.

Storage: Store away from sunlight in a cool and dark place at 36-47°F (2-8°C).

8. EXPOSURE CONTOROLS, PERSONAL PROTECTION

Engineering measures: General ventilation and/or local exhaust ventilation as well as process isolation is necessary to minimize employee exposure and maintain exposure limits below exposure limits. Equip eye flushing facilities and shower rooms near operating place where this kit is handled or stored.

Control parameter:

⑧JSOH (Japan);	OEL= 1 mg/m3
ACGIH TLV(s);	TWA= 0.2 mg/m3

Personal protection:

Respiratory protection;	NIOSH and MSHA approved respirator.
Hand protection;	Suitable impervious gloves.
Eye protection;	Suitable safety glasses (goggles).
Skin protection;	Suitable protective clothing.

Others: Wash hands thoroughly after handling materials.

9. PHYSICAL AND CHEMICAL PROPERTIES

Component	1)	2)	3)	4)	5)	6)	7)	8)	9)	10)
Appearance	Colorless plate	White color, lyophilized powder	White color, lyophilized powder	White color, lyophilized powder	Orange color, Liquid	Colorless to pale yellow liquid	Colorless transparent, Liquid	Light yellow color, Liquid	Colorless transparent, Liquid	Colorless transparent Polymer sheet
pH	N/A	N/A	N/A	N/A	D/N/A	3.3-3.8	<1.0	7.0	D/N/A	N/A
Melting point	N/A	D/N/A	D/N/A	D/N/A	N/A	N/A	N/A	N/A	N/A	N/A
Boiling point	N/A	N/A	N/A	N/A	D/N/A	D/N/A	D/N/A	D/N/A	D/N/A	N/A
Flash point	N/A	D/N/A	D/N/A	D/N/A	D/N/A	D/N/A	D/N/A	D/N/A	D/N/A	N/A
Explosive limits	N/A	D/N/A	D/N/A	D/N/A	D/N/A	D/N/A	D/N/A	D/N/A	D/N/A	N/A
Vapor pressure	N/A	D/N/A	D/N/A	D/N/A	D/N/A	D/N/A	D/N/A	D/N/A	D/N/A	N/A
Vapor density (air=1)	N/A	D/N/A	D/N/A	D/N/A	D/N/A	D/N/A	D/N/A	D/N/A	D/N/A	N/A
Specifics gravity	D/N/A	D/N/A	D/N/A	D/N/A	D/N/A	1.01	D/N/A	D/N/A	D/N/A	D/N/A
Solubility in water	Insoluble	Soluble	Soluble	Soluble	Mixable	Mixable	Mixable	Mixable	Mixable	Insoluble
Decomposition temperature	D/N/A	D/N/A	D/N/A	D/N/A	D/N/A	D/N/A	D/N/A	D/N/A	D/N/A	N/A

N/A.; Not applicable;
D/N/A; data not available

10. STABILITY AND REACTIVITY

Chemical stability: Product is stable under normal handling.
Shelf life: Stable up to 12 months after manufacturing.
Hazardous polymerization: Will not occur.
Conditions to avoid: Extremes of temperature and direct sunlight, heat flames and sparks, static electricity, spark, moisture.
Incompatibility with other materials: Alkaline substances, strong oxidizing agents
Hazardous decomposition products: Sulfur oxides (SOx), Carbon monoxide(CO), carbon dioxide(CO2)

11. TOXICOLOGICAL INFORMATION

Information as the mixture is not available.
Acute toxicity:

4), 8) EDTA2Na; Not classified
6) No data available
7) Sulfuric acid (inhalation, rat); 4h LC50=347ppm
(Oral, rat) LD50=2140mg/kg
Acute toxicity (Oral) Not classified
Acute toxicity (Inhalation; Dusts and mists) Category 2
⑧Content=9.69% Acute toxicity (Inhalation; Dusts and mists) Category 4
9) Tween 20 (oral, rat); LD50=37000mg/kg
Inhalation (rat); >5.1mg/L, 4h

Skin corrosion/irritation:

4), 8) EDTA2Na; Not classified
6) No data available

7) Sulfuric acid; Category 1
⑧Content=9.69% Category 1
9) Tween 20; No information available

Serious eye damage/irritation:
4), 8) EDTA2Na; Not classified
6) No data available
7) Sulfuric acid; Category 1
⑧Content=9.69% Category 1
9) Tween 20; No information available

Respiratory or skin sensitization:
Respiratory sensitization:
4), 8) EDTA2Na; Not classified
6) No data available
7) Sulfuric acid; Classification not possible
9) Tween 20; No information available

Skin sensitization:
4), 8) EDTA2Na; Not classified
6) No data available
7) Sulfuric acid; Not classified
9) Tween 20; No information available

Germ cell mutagenicity:
4), 8) EDTA2Na; Not classified
6) No data available
7) Sulfuric acid; Classification not possible
9) Tween 20; No information available

Carcinogenicity:
4), 8) EDTA2Na; Not classified
6) No data available
7) Sulfuric acid; Occupational exposure to Mist of inorganic strong acids including sulfuric acid is classified to group 1 in IARC (to have carcinogenicity for human), group A2 in ACGIH (suspected human carcinogens) and group K in NTP (known to have carcinogenicity for human). With respect for the evaluation by IARC and current evaluation by NTP, it should be classified to category 1, however since sulfuric acid itself is classified to Category 4 in DFGOT and is not classified to carcinogen by any other organization,
Classification not possible
9) Tween 20; No information available

Reproductive toxicity:

4), 8) EDTA2Na; Not classified
6) No data available
7) Sulfuric acid; Not classified
9) Tween 20; No information available

Specific target organ systemic toxicity/Single exposure:

4), 8) EDTA2Na; Not classified
6) No data available
7) Sulfuric acid; Category 1 (Respiratory system)
⑧Content=9.69% Category 1
9) Tween 20; No information available

Specific target organ systemic toxicity/Repeated exposure:

4), 8) EDTA2Na; Not classified
6) No data available
7) Sulfuric acid; Category 1 (Respiratory system)
⑧Content=9.69% Category 1
9) Tween 20; No information available

Aspiration hazard:

4), 8) EDTA2Na; Not classified
6) No data available
7) Sulfuric acid; Classification not possible
9) Tween 20; No information available

12. ECOLOGICAL INFORMATION

Information as the mixture is not available.

Aquatic environmental toxicity/Acute phase:

4),8) EDTA2Na; Not classified
6) No data available
7) Sulfuric acid; 96-hour LC50 (pH 3.25-3.5) = 16-28 mg/L for fish (Lepomis macrochirus) (OECD SIDS: 2001). Category 3
⑧Content=9.69% Not classified
9) Tween 20; No information available

Aquatic environmental toxicity/Chronical phase:

4), 8) EDTA2NA; Not classified
6) No data available
7) Sulfuric acid; 45-day NOEC (growth) (pH6.0) = 0.025 mg/L for fish (Jordanella floridae) (OECD SIDS: 2001) Category 1
⑧Content=9.69% Category 2
9) Tween 20; No information available

Persistence and degradability:

4), 8) EDTA2NA; No information available
6) No data available
7) Sulfuric acid; No information available
9) Tween 20; No information available

Bioaccumulative potential:

4), 8) EDTA2NA; No information available
6) No data available
7) Sulfuric acid; No information available
9) Tween 20; No information available

Mobility in soil:

4), 8) EDTA2NA; No information available
6) No data available
7) Sulfuric acid; No information available
9) Tween 20; No information available

Hazard to the ozone layer:

4), 8) EDTA2NA; No information available
6) No data available
7) Sulfuric acid; Classification not possible
9) Tween 20; No information available

13. DISPOSAL CONSIDERATIONS

Dispose of all waste material including containers in accordance with all applicable laws and local environmental regulations.

14. TRANSPORT INFORMATION

IATA; As a mixture, the substance is subjected to no limitations.

ADR/RID

UN number	UN2796
Proper shipping name;	Sulfuric acid
UN classification	8
Packing group	II
Marine pollutant	Not applicable

IMDG

UN number	UN2796
Proper shipping name;	Sulfuric acid
UN classification	8
Packing group	II
Marine pollutant	Not applicable
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	No information available

IATA

UN number	UN2796
Proper shipping name;	Sulfuric acid
UN classification	8
Packing group	II
Environmentally Hazardous Substance	Not applicable

15. REGULATORY INFORMATION

International Inventories	
EINECS/ELINCS	⑧Listed
TSCA	⑧Listed
Japanese regulations	
Fire Service Act;	Not applicable
Poisonous and Deleterious Substances Control Law;	Not applicable
Industrial Safety and Health Act;	⑧Group 3 Specified Chemical Substance, (Ordinance on Prevention of Hazards Due to Specified Chemical Substances Art.2 Para.1, Item 6) ⑧Harmful Substances Whose Names Are to be Indicated on the Label (Law Art.57, Para.1, Enforcement Order Art.18) ⑧Notifiable Substances (Law Art.57-2, Enforcement Oder Art.18-2 Attached Table 9) No.613
Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.;	Not applicable
Regulations for the carriage and storage of dangerous goods in ship;	⑧Corrosive Substances(Ordinance Art.3, Ministry of Transportation Ordinance Regarding Transport by Ship and Storage, Attached Table 1)
Civil Aeronautics Law;	⑧Corrosive Substances(Ordinance Art.194, MITL Notification for Air Transportation of Explosives etc. , Attached Table 1)
Air Pollution Control Law;	⑧Specified substance
Marine Pollution Prevention Law;	⑧Enforcement ordinance Appendix No. 1 Noxious liquid substance Category Y
Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof (Pollutant Release and Transfer Register Law/ PRTR);	⑤Class I Designated Chemical Substances, No. 595
Water Pollution Control Act;	⑧Specified substances(Law Art.2 Para.4, Enforcement Order Art.3-3)
Export Trade Control Order;	Not applicable

16. OTHER INFORMATION

Reference and abbreviation

1) Internal data of Yanaihara Institute, Inc.
2) RTECS ; Registry of Toxic Effects of Chemical Substances.
3) NTP DB (Access on Dec., 2005), National Toxicology Program
4) SDS by FUJI FILM Wako Pure Chemical Corporation
5) ACGIH(2004); American Conference of Governmental Industrial Hygienists
6) JSOH ; Japanese Society of Occupational Health
Recommendation of Occupational Exposure Limits (2021-2022)
7) NIOSH; National Institute of Occupational Safety and Health
8) MSHA; Mine Safety and Health Administration
9) IARC(1992); International Agency for Research on Cancer
10) DFGOT; Occupational Toxicants; Critical Data Evaluation for MAK Value and Classification of Carcinogens, Vol. 15, 2001
11) SDS by Dojindo Laboratories
12) SDS by Bio-Rad laboratories, Life Science Group
13) OECD SIDS: Screening Information Data Set (OECD SIDS 2001)

Key literature references and sources for data etc.;
NITE; National Institute of Technology and Evaluation (JAPAN) http;//www.safe.nite.go.jp/japan/db.html
IATA dangerous Goods Regulations, RTECS; Registry of Toxic Effects of Chemical Substances, Japan Industrial Safety and Health Association GHS Model SDS, Dictionary of Synthetic Organic Chemistry, SSOCJ, Koudansha Scientific Co. Ltd. , Chemical Dictionary, Kyouritsu Publishing Co., Ltd. etc.

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