



**SUBJECT** Safety Data Sheet (SDS)

**SERVICE LOCATION** TÜV SÜD China

TÜV SÜD Products Testing (Shanghai) Co., Ltd.  
B-3/4, No.1999 Du Hui Road, Minhang District  
Shanghai 201108, P.R. China

**CLIENT NAME** Alpha Advanced Technologies, Co. Ltd.

**CLIENT ADDRESS** G/F, 631-633 Reclamation Street, Mongkok, Kowloon, Hong Kong

**The sample information was submitted and identified on applicant's behalf to be:**

**SAMPLE NAME** UBET Clean Zeolite Functional Materials

**PREPARED PERIOD** 12-Jun-2020~19-Jun-2020

**SERVICE REQUESTED** Based on the information provided by the applicant, the Safety Data Sheet (SDS) was prepared according to UN GHS (the 8th revised edition)

Prepared By

*Judy hu*

( Judy Hu )  
Report Drafter

Authorized By



**Note:** (1) General Terms & Conditions as mentioned overleaf. (2) The results relate only to the items tested. (3) The test report shall not be reproduced except in full without the written approval of the laboratory. (4) Without the agreement of the laboratory, the client is not authorized to use the test results for unapproved propaganda.

## Safety Data Sheet

# UBET Clean Zeolite Functional Materials

\*Prepared according to UN GHS (the 8th revised edition)

## 1 Identification of the chemical and supplier

### Product identifier

Product Name	UBET Clean Zeolite Functional Materials
CAS No.	Not applicable
EC No.	Not applicable
Molecular Formula	Not applicable

### Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Air purification and environmental protection.
Uses advised against	No special note.

### Details of the supplier of the Safety Data Sheet

Name of the company	Alpha Advanced Technologies, Co. Ltd.
Address of the company	G/F, 631-633 Reclamation Street, Mongkok, Kowloon, Hong Kong
Post code	/
Telephone number	13641684768
Fax number	/
E-mail address	wilson.xia@aat-hk.com

### Emergency phone number

Emergency phone number	13641684768
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## 2 Hazards identification

## Hazard classification according to GHS

Acute Toxicity – Oral	Category 4
Acute Toxicity – Dermal	Category 4
Skin Corrosion/Irritation	Category 1B
Serious Eye Damage/Irritation	Category 1
Acute Toxicity – Inhalation	Category 4
Specific Target Organ Toxicity (Repeated Exposure)	Category 2
Hazardous To The Aquatic Environment – Short-Term (Acute) Hazard	Category 2
Hazardous To The Aquatic Environment – Long-Term (Chronic) Hazard	Category 2

## Label elements

Hazard pictograms	
Signal word	<b>Danger</b>

## Hazard statements

H302	Harmful if swallowed
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H332	Harmful if inhaled
H373	May cause damage to organs through prolonged or repeated exposure
H401	Toxic to aquatic life
H411	Toxic to aquatic life with long lasting effects

## Precautionary statements

### ◆ Prevention

P260	Do not breathe dust/fume.
P264	Wash face and hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

### ◆ Response

P316	Get emergency medical help immediately.
P317	Get medical help.
P319	Get medical help if you feel unwell.
P321	Specific treatment (see related instructions on this label).
P330	Rinse mouth.
P363	Wash contaminated clothing before reuse.
P391	Collect spillage.
P301+P317	IF SWALLOWED: Get medical help.
P302+P352	IF ON SKIN: Wash with plenty of water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P362+P364	Take off contaminated clothing and wash it before reuse.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302+P361+P354	IF ON SKIN: Take off immediately all contaminated clothing. Immediately rinse with water for several minutes.
P305+P354+P338	IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

◆ Storage

P405	Store locked up.
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◆ Disposal

P501	Dispose of contents/container in accordance with local/regional/national/international regulations.
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## Hazard description

◆ Physical and chemical hazards

	Solid, toxic smoke/fumes in a fire.
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◆ Health hazards

Inhaled	Inhalation of dusts or fumes, generated by the product during the course of normal handling, may produce severely toxic effects; these may be harmful. Corrosive product can cause irritation of the respiratory tract, with coughing, choking and mucous membrane damage.
Ingestion	Accidental ingestion of the product may be harmful.
Skin Contact	The product can cause severe skin burns following direct contact with the skin. Skin contact with the product may be harmful to the health of the individual, systemic effects may result following absorption.
Eye	The product can produce severe chemical burns to the eye following direct contact. If timely and appropriate treatment is not available may cause permanent blindness.

◆ Environmental hazards

	This product is toxic to aquatic life with long lasting effects. Please refer to 12th chapter of SDS.
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## 3 Composition/information on ingredients

Component	Cas No.	EC No.	Concentration (weight percent, %)
Microcrystalline cellulose	9004-34-6	232-674-9	Commercial secrets
Sodium chlorite	7758-19-2	231-836-6	Commercial secrets

Citric acid	77-92-9	201-069-1	Commercial secrets
Additive	-	-	Commercial secrets

## 4 First aid measures

### Description of first aid measures

<b>General advice</b>	Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.
<b>Eye contact</b>	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.
<b>Skin contact</b>	Take off contaminated clothing and shoes immediately. Wash off with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.
<b>Ingestion</b>	Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.
<b>Inhalation</b>	Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.
<b>Protecting of first-aiders</b>	Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

### Most important symptoms and effects, both acute and delayed

1	Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.
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### Indication of any immediate medical attention and special treatment needed

1	Treat symptomatically.
2	Symptoms may be delayed.

## 5 Firefighting measures

### Extinguishing media

<b>Suitable extinguishing media</b>	Dry chemical, carbon dioxide or alcohol-resistant foam.
<b>Unsuitable extinguishing media</b>	Do not use a solid water stream.

### Specific hazards arising from the substance or mixture

1	Fire may produce irritating, poisonous or corrosive gases.
2	Development of hazardous combustion gases or vapor possible in the event of fire.
3	Not combustible, not considered a significant fire risk, however containers may burn.

### Advice for firefighters

1	As in any fire, wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear.
2	Fight fire from a safe distance, with adequate cover.
3	Prevent fire extinguishing water from contaminating surface water or the ground water system.

## 6 Accidental release measures

### Personal precautions, protective equipment and emergency procedures

1	Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire.
2	Do not touch or walk through spilled material.
3	Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

4	Ensure adequate ventilation. Remove all sources of ignition.
5	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
6	Use personal protective equipment. Avoid breathing mist or dust.

### Environmental precautions

1	Prevent further leakage or spillage if safe to do so.
2	Discharge into the environment must be avoided.

### Methods and materials for containment and cleaning up

1	Use clean, non-sparking tools to collect absorbed material.
2	Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.
3	Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

## 7 Handling and storage

### Precautions for handling

1	Handling is performed in a well ventilated place.
2	Wear suitable protective equipment.
3	Avoid contact with skin and eyes.
4	Keep away from heat/sparks/open flames/ hot surfaces.

### Precautions for storage

1	Keep containers tightly closed.
2	Keep containers in a dry, cool and well-ventilated place.
3	Keep away from heat/sparks/open flames/hot surfaces.
4	Store away from incompatible materials and foodstuff containers.
5	Storage temperature generally should not be higher than 30 °C, relative humidity generally should not be higher than 80%.

## 8 Exposure controls/personal protection

### Control parameters

#### ◆ Occupational Exposure limit values

Component	Country/Region	Limit value - Eight hours		Limit value - Short term	
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Microcrystalline cellulose 9004-34-6	USA - OSHA	-	15	-	-
	South Korea	-	10	-	-
	Ireland	-	10	-	20
	France	-	10	-	-
	Belgium	-	10	-	-
	Australia	-	10	-	-
Sodium chlorite 7758-19-2	Latvia	-	0.5	-	-

#### ◆ Biological limit values

<b>Biological limit values</b>	No relevant regulations
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◆ Monitoring methods

1	EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
2	GBZ/T 160.1~GBZ/T 160.81-2004 Determination of toxic substances in workplace air (Series standard) .

**Engineering controls**

1	Ensure adequate ventilation, especially in confined areas.
2	Ensure that eyewash stations and safety showers are close to the workstation location.
3	Set up emergency exit and necessary risk-elimination area.
4	Handle in accordance with good industrial hygiene and safety practice.

**Personal protection equipment**

<b>General requirement</b>	
<b>Eye protection</b>	Tightly fitting safety goggles (approved by EN 166(EU) or NIOSH (US)).
<b>Hand protection</b>	Wear protective gloves (such as butyl rubber) , passing the tests according to EN 374(EU), US F739 or AS/NZS 2161.1 standard.
<b>Respiratory protection</b>	If exposure limits are exceeded or if irritation or other symptoms are experienced, use a full-face respirator with multi-purpose combination.
<b>Skin and body protection</b>	Wear corrosion-resistant protective clothing and protective boots.

**9 Physical and chemical properties**

**Physical and chemical properties**

<b>Appearance</b>	Solid particles
<b>Odor</b>	Slightly pungent odor
<b>Odor threshold</b>	No information available
<b>pH</b>	No information available
<b>Melting point/freezing point(°C)</b>	No information available
<b>Initial boiling point and boiling range(°C)</b>	No information available
<b>Flash point(Closed cup,°C)</b>	Not applicable
<b>Evaporation rate</b>	Not applicable
<b>Flammability</b>	Not combustible
<b>Upper/lower explosive limits[% (v/v)]</b>	Upper limit: No information available; Lower limit: No information available
<b>Vapor pressure</b>	Not applicable
<b>Relative vapour density(Air = 1)</b>	Not applicable
<b>Relative density(Water=1)</b>	1.6
<b>Solubility(mg/L)</b>	Partly miscible with water
<b>n-octanol/water partition coefficient</b>	No information available
<b>Auto-ignition</b>	No information available

temperature(°C)	
Decomposition temperature(°C)	No information available
Kinematic viscosity	Not applicable
Particle characteristics	Particles

## 10 Stability and reactivity

### | Stability and reactivity

Reactivity	Contact with incompatible substances can cause decomposition or other chemical reactions.
Chemical stability	Stable under proper operation and storage conditions.
Possibility of hazardous reactions	Mixture with metal powders may explode if heated, impact or friction. Flammable, its gas or powder, if in contact with air, may form explosive mixtures.
Conditions to avoid	Incompatible materials, heat, flame and spark.
Incompatible materials	Metal powder, metal amino compounds, ammonia, ammonium salts, amine, amide, carboxylic acids, phenols, alcohols, carboxylic acid esters, nitriles, sulfuric acid, concentrated nitric acid and phosphoric acid. Metal alkoxides, furfuryl alcohol, acetaldehyde, nitric acid, nitrate, nitrite, oxyacid salt halogen and inorganic peroxide.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## 11 Toxicological information

### | Acute toxicity

Component	Cas No.	LD <sub>50</sub> (oral)	LD <sub>50</sub> (dermal)	LC <sub>50</sub> (inhalation,4h)
Microcrystalline cellulose	9004-34-6	> 5000mg/kg(Rat)	>2000mg/kg(Rabbit)	> 5.8mg/L(Rat)
Sodium chlorite	7758-19-2	165mg/kg(Rat)	134mg/kg(Rabbit)	0.23mg/L(Rat)
Citric acid	77-92-9	3000mg/kg(Rat)	No information available	No information available

### | Carcinogenicity

ID	Cas No.	Component	IARC	NTP
1	9004-34-6	Microcrystalline cellulose	Not Listed	Not Listed
2	7758-19-2	Sodium chlorite	Category 3	Not Listed
3	77-92-9	Citric acid	Not Listed	Not Listed
4	-	Additive	Not Listed	Not Listed

### | Others

UBET Clean Zeolite Functional Materials	
Skin corrosion/irritation	Causes severe skin burns and eye damage(Category 1B)
Serious eye damage/irritation	Causes serious eye damage(Category 1)
Skin sensitization	Based on available data, the classification criteria are not met
Respiratory sensitization	Based on available data, the classification criteria are not met
Reproductive toxicity	Based on available data, the classification criteria are not met
STOT-single exposure	Based on available data, the classification criteria are not met



<b>STOT-repeated exposure</b>	May cause damage to organs through prolonged or repeated exposure (Category 2)
<b>Aspiration hazard</b>	Based on available data, the classification criteria are not met
<b>Germ cell mutagenicity</b>	Based on available data, the classification criteria are not met
<b>Reproductive toxicity(additional)</b>	Based on available data, the classification criteria are not met

## 12 Ecological information

### Acute aquatic toxicity

Component	Cas No.	Fish	Crustaceans	Algae
Sodium chlorite	7758-19-2	LC <sub>50</sub> : 278mg/L (96h)(Fish)	EC <sub>50</sub> : 0.15mg/L (48h)(Crustaceans)	ErC <sub>50</sub> : 1.32mg/L (96h)(Algae)

### Chronic aquatic toxicity

<b>Chronic aquatic toxicity</b>	No information available
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### Persistence and degradability

Component	Cas No.	Persistence (water/soil)	Persistence (air)
Microcrystalline cellulose	9004-34-6	Low	Low
Citric acid	77-92-9	Low	Low

### Bioaccumulative potential

Component	Cas No.	Bioaccumulative potential	comments
Microcrystalline cellulose	9004-34-6	Low	Log Kow=-5.1249
Citric acid	77-92-9	Low	Log Kow=-1.7

### Mobility in soil

Component	Cas No.	Mobility in soil	Soil Organic Carbon-Water Partitioning Coefficient (Koc)
Microcrystalline cellulose	9004-34-6	Low	10
Citric acid	77-92-9	Low	10

### Results of PBT and vPvB assessment

Component	Cas No.	Results of PBT and vPvB assessment (according to (EC) No 1907/2006)
Microcrystalline cellulose	9004-34-6	not PBT/vPvB
Sodium chlorite	7758-19-2	not PBT/vPvB
Citric acid	77-92-9	not PBT/vPvB



## 13 Disposal considerations

### Disposal considerations

<b>Waste chemicals</b>	Before disposal should refer to the relevant national and local laws and regulation. Recommend the use of incineration disposal.
<b>Contaminated packaging</b>	Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible.
<b>Disposal recommendations</b>	Refer to section waste chemicals and contaminated packaging.

## 14 Transport information

### Label and Mark

Transporting Label	
Marine pollutant	

### IMDG-CODE

UN number	1759
UN proper shipping name	CORROSIVE SOLID, N.O.S. (Sodium chlorite)
Transport hazard class	8
Transport subsidiary hazard class	None
Packing group	II
Special provisions	274
Limited quantities	1 kg
Excepted quantities	E2
Marine pollutant (Yes or no)	Yes
EmS No.	F-A,S-B

### ICAO/IATA-DGR

UN number	1759
UN proper shipping name	CORROSIVE SOLID, N.O.S. (Sodium chlorite)
Transport hazard class	8
Transport subsidiary hazard class	None
Packing group	II
Excepted quantities	E2
Passenger and Cargo Aircraft Limited Quantity Packing Instructions	Y844
Passenger and Cargo Aircraft Limited Quantity Maximum net Quantity per Package	5 kg
Passenger and Cargo Aircraft Packing Instructions	859
Passenger and Cargo Aircraft Maximum net Quantity per Package	15 kg
Cargo Aircraft Packing Instructions	863

Cargo Aircraft Maximum net Quantity per Package	50 kg
Special provisions	A3, A803
ERG code	8L

### UN-ADR

UN number	1759
UN proper shipping name	CORROSIVE SOLID, N.O.S. (Sodium chlorite)
Transport hazard class	8
Transport subsidiary hazard class	None
Packing group	II
Special provisions	274
Limited quantities	1 kg
Excepted quantities	E2
Packing instructions	P002 IBC08
Special packing provisions	B4
Mixed packing provisions	MP10
Portable tanks and bulk containers instructions	T3
Portable tanks and bulk containers special provisions	TP33
ADR tank code	SGAN L4BN
ADR tank special provisions	-
Vehicle for tank carriage	AT
Transport category(Tunnel restriction code)	2 (E)
Special provisions for carriage(Packages)	V11
Special provisions for carriage(Bulk)	-
Special provisions for carriage>Loading, unloading and handling)	-
Special provisions for carriage(Operation)	-
Hazard identification No.	80
Notes	-

## 15 Regulatory information

### International chemical inventory

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS	ENCS
Microcrystalline cellulose	✓	✓	✓	✓	✓	✓	✓	✓	✗

Sodium chlorite	✓	✓	✓	✓	✓	✓	✓	✓	✓
Citric acid	✓	✓	✓	✓	✓	✓	✓	✓	✓
Additive	✗	✗	✗	✗	✗	✗	✗	✗	✗

【EINECS】 European Inventory of Existing Commercial Chemical Substances

【TSCA】 United States Toxic Substances Control Act Inventory

【DSL】 Canadian Domestic Substances List

【IECSC】 China Inventory of Existing Chemical Substances

【NZIoC】 New Zealand Inventory of Chemicals

【PICCS】 Philippines Inventory of Chemicals and Chemical Substances

【KECI】 Existing and Evaluated Chemical Substances

【AICS】 Australia Inventory of Chemical Substances

【ENCS】 Existing And New Chemical Substances

Note

"✓" Indicates that the substance included in the regulations

"✗" That no data or included in the regulations

## 16 Others

### Information on revision

Creation Date	2020/06/17
Revision Date	2020/06/17
Reason for revision	-

### Reference

[1]IPCS: The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>.

[2]IARC, website: <http://www.iarc.fr/>.

[3]OECD: The Global Portal to Information on Chemical Substances, website:  
[http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en).

[4]CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>.

[5]NLM: ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>.

[6]EPA: Integrated Risk Information System, website: <http://cfpub.epa.gov/iris/>.

[7]U.S. Department of Transportation: ERG, website: <http://www.phmsa.dot.gov/hazmat/library/erg>.

[8]Germany GESTIS-database on hazard substance, website: <http://gestis-en.itrust.de/>.

### Abbreviations and acronyms

CAS –Chemical Abstracts Service

PC-STEL- Short term exposure limit

DNEL - Derived No Effect Level

RPE - Respiratory Protective Equipment

LC<sub>50</sub> - Lethal Concentration 50%

NOEC -No Observed Effect Concentration

PBT - Persistent, Bioaccumulative, Toxic

BCF - Bioconcentration factor (BCF)

IMDG-International Maritime Dangerous Goods

CMR - Carcinogens, mutagens or substances toxic to reproduction

PC-TWA - Time Weighted Average

IARC - International Agency for Research on Cancer

PNEC –Predicted No Effect Concentration

LD<sub>50</sub> - Lethal Dose 50%

EC<sub>50</sub> - Effective Concentration 50%

POW - Partition coefficient Octanol: Water

vPvB - very Persistent, very Bioaccumulative

ICAO/IATA-International Civil Aviation Organization/International Air

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Transportation Association

**UN**-The United Nations

**ACGIH**-American Conference of Governmental Industrial Hygienists

**NFPA**-National Fire Protection Association

**OECD**-Organization for Economic Co-operation and Development

## **| Disclaimer**

This Safety Data Sheet (SDS) was prepared according to UN GHS (the 8th revised edition). The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user' s reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

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