

SAFETY DATA SHEET

According to EC directive 2001/58/EC.

T-CAT bin, T-CAT big bag

Version 3.1

Revision Date 2020.09.17

Print Date 2022.08.29

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : T-CAT bin, T-CAT big bag

Product code : L1981

Manufacturer or supplier's details

Supplier : SHELL EASTERN CHEMICALS (S)
A REGISTERED BUSINESS OF SHELL EASTERN
TRADING (PTE) LTD (UEN:198902087C)
9 North Buona Vista Drive , #07-01
The Metropolis Tower 1
Singapore 138588
Singapore

Telephone : Shell Tsing Yi Installation Central Control Room (TYI CCR)
+65 6384 8737

Telefax : +65 6384 8454

Emergency telephone : + 65 6542 9595 (Alert-SGS)
number

Recommended use of the chemical and restrictions on use

Recommended use : Catalyst., For industrial use only.

Restrictions on use : This product must not be used in applications other than the
above without first seeking the advice of the supplier.

2. HAZARDS IDENTIFICATION

GHS Classification

Not a hazardous substance or mixture.

GHS label elements

Hazard pictograms : No Hazard Symbol required

Signal word : No signal word

Hazard statements : PHYSICAL HAZARDS:
Not classified as a physical hazard under GHS criteria.
HEALTH HAZARDS:
Not classified as a health hazard under GHS criteria.
ENVIRONMENTAL HAZARDS:
Not classified as an environmental hazard under GHS criteria.

Precautionary statements : **Prevention:**
No precautionary phrases.

Response:

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No precautionary phrases.

Storage:

No precautionary phrases.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No. EC-No. Registration number	Classification	Concentration (% w/w)
Silica amorphous	7631-86-9		> 95 - < 100
titanium dioxide	13463-67-7		> 0 - < 5

4. FIRST-AID MEASURES

- General advice : Not expected to be a health hazard when used under normal conditions.
- If inhaled : No treatment necessary under normal conditions of use.
If symptoms persist, obtain medical advice.
- In case of skin contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.
If persistent irritation occurs, obtain medical attention.
- In case of eye contact : Flush eye with copious quantities of water.
Remove contact lenses, if present and easy to do. Continue rinsing.
If persistent irritation occurs, obtain medical attention.
- If swallowed : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.
- Most important symptoms and effects, both acute and delayed : Not considered to be an inhalation hazard under normal conditions of use.
Possible respiratory irritation signs and symptoms may include

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a temporary burning sensation of the nose and throat, coughing, and/or difficulty breathing.

No specific hazards under normal use conditions.
Skin irritation signs and symptoms may include a burning sensation, redness, or swelling.

No specific hazards under normal use conditions.
Eye irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blurred vision.

Ingestion may result in nausea, vomiting and/or diarrhoea.

Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.

Notes to physician : Call a doctor or poison control center for guidance.
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable extinguishing media : Do not use water in a jet.

Specific hazards during firefighting : No specific hazards.

Specific extinguishing methods : Standard procedure for chemical fires.
Keep adjacent containers cool by spraying with water.

Special protective equipment for firefighters : Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Observe all relevant local and international regulations.
Avoid raising a dust cloud.

: Avoid contact with skin, eyes and clothing.
Isolate hazard area and deny entry to unnecessary or unprotected personnel.
Do not breathe fumes, vapour.
Do not operate electrical equipment.

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- Environmental precautions : Prevent from spreading or entering into drains, ditches or rivers by using sand, earth, or other appropriate barriers. Use appropriate containment to avoid environmental contamination. Ventilate contaminated area thoroughly.
- Methods and materials for containment and cleaning up : Prevent from spreading or entering into drains, ditches or rivers by using sand, earth, or other appropriate barriers.
- Additional advice : For guidance on selection of personal protective equipment see Section 8 of this Safety Data Sheet. For guidance on disposal of spilled material see Section 13 of this Safety Data Sheet.

7. HANDLING AND STORAGE

Handling

- General Precautions : Avoid breathing of or direct contact with material. Only use in well ventilated areas. Wash thoroughly after handling. For guidance on selection of personal protective equipment see Section 8 of this Safety Data Sheet. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
- Advice on safe handling : Avoid generation or accumulation of dusts. Avoid breathing dust. Avoid contact with skin, eyes and clothing.
- Avoidance of contact : Oxidising agents.

Storage

- Conditions for safe storage : Keep tightly closed in a dry and cool place. Refer to section 15 for any additional specific legislation covering the packaging and storage of this product.
- Specific use(s) : Not applicable
- Ensure that all local regulations regarding handling and storage facilities are followed.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
titanium dioxide	13463-67-7	OEL-TWA	10 mg/m3	HK OEL

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		(inhalable dust)		
titanium dioxide		OEL-TWA (Respirable dust)	4 mg/m3	HK OEL
titanium dioxide	13463-67-7	TWA (total dust)	15 mg/m3	OSHA Z-1
titanium dioxide		TWA	10 mg/m3	ACGIH

Biological occupational exposure limits

No biological limit allocated.

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.

Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods <http://www.cdc.gov/niosh/>

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods <http://www.osha.gov/>

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances <http://www.hse.gov.uk/>

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA), Germany <http://www.dguv.de/inhalt/index.jsp>

L'Institut National de Recherche et de Sécurité, (INRS), France <http://www.inrs.fr/accueil>

Engineering measures

- : Adequate ventilation to control airborne concentrations.
- Local exhaust ventilation is recommended.
- Eye washes and showers for emergency use.
- The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances.
- Appropriate measures include:

Personal protective equipment

Protective measures

Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Respiratory protection

- : If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus. Where air-filtering respirators are suitable, select an

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appropriate combination of mask and filter.

Hand protection
Remarks

: Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection.

Incidental contact/Splash protection: Nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced.

Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.

Eye protection

: Dust-tight monogoggles

Skin and body protection

: Where risk of splashing or in spillage clean up, use chemical resistant one-piece overall with integral hood, chemical resistant knee length boots and chemical resistant gloves. Otherwise use chemical resistant apron and gauntlets. For spillage clean up use chemical resistant knee length boots.

Hygiene measures

: Wash hands before eating, drinking, smoking and using the toilet.
Launder contaminated clothing before re-use.

Environmental exposure controls

General advice

: Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: solid
Colour	: white
Odour	: slight
Odour Threshold	: Data not available
pH	: Not applicable
Melting / freezing point	: Not applicable
Boiling point/boiling range	: Not applicable
Flash point	: Not applicable
Evaporation rate	: Data not available
Flammability (solid, gas)	: The product is not flammable.

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Upper explosion limit	: Not applicable
Lower explosion limit	: Not applicable
Vapour pressure	: Not applicable
Relative vapour density	: Not applicable
Relative density	: Data not available
Density	: Data not available
Bulk density	: 400 kg/m3
Solubility(ies)	
Water solubility	: Not applicable
Partition coefficient: n-octanol/water	: Data not available
Auto-ignition temperature	: Data not available
Decomposition temperature	: Data not available
Viscosity	
Viscosity, dynamic	: Data not available
Viscosity, kinematic	: Data not available
Explosive properties	: Not applicable
Oxidizing properties	: Data not available
Surface tension	: Data not available
Conductivity	: Data not available
Particle size	: Data not available
Molecular weight	: Not applicable

10. STABILITY AND REACTIVITY

Reactivity	: The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.
Chemical stability	: No hazardous reaction is expected when handled and stored according to provisions
Possibility of hazardous reactions	: None known.
Conditions to avoid	: Avoid heat, sparks, open flames and other ignition sources.
Incompatible materials	: Oxidising agents.
Hazardous decomposition products	: None expected under normal use conditions.

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11. TOXICOLOGICAL INFORMATION

Basis for assessment : Information given is based on data from components.

Acute toxicity

Product:

Acute oral toxicity : LD50 Rat: > 5,000 mg/kg
Remarks: Low toxicity:
Based on available data, the classification criteria are not met.

Acute inhalation toxicity : LC50 Rat: Remarks: Low toxicity:
Based on available data, the classification criteria are not met.

Acute dermal toxicity : LD50 Rabbit: > 2,000 mg/kg

Skin corrosion/irritation

Product:

Remarks: Not irritating to skin.

Serious eye damage/eye irritation

Product:

Remarks: Slightly irritating to the eye., Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation

Product:

Remarks: Not a sensitiser.
Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Product:

: Remarks: Non mutagenic

Carcinogenicity

Product:

Remarks: Not a carcinogen., Based on available data, the classification criteria are not met.

Material	GHS/CLP Carcinogenicity Classification
Silica amorphous	No carcinogenicity classification.
titanium dioxide	No carcinogenicity classification.

Material	Other Carcinogenicity Classification
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Silica amorphous	IARC: Group 3: Not classifiable as to its carcinogenicity to humans
Silica amorphous	IARC: Group 1: Carcinogenic to humans
titanium dioxide	IARC: Group 2B: Possibly carcinogenic to humans

Reproductive toxicity

Product:

:
Remarks: Not a developmental toxicant., Based on available data, the classification criteria are not met., Does not impair fertility.

STOT - single exposure

Product:

Remarks: May cause respiratory irritation.

STOT - repeated exposure

Product:

Remarks: Repeated exposure affects the respiratory system.

Aspiration toxicity

Product:

Not an aspiration hazard.

Further information

Product:

Remarks: Classifications by other authorities under varying regulatory frameworks may exist.

12. ECOLOGICAL INFORMATION

Basis for assessment : Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

Ecotoxicity

Product:

Toxicity to fish (Acute toxicity) :
Remarks: LC/EC/IC50 > 100 mg/l
Practically non toxic:
Based on available data, the classification criteria are not met.

Toxicity to crustacean (Acute :)

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toxicity)

Remarks: LC/EC/IC50 > 100 mg/l

Practically non toxic:

Based on available data, the classification criteria are not met.

Toxicity to algae/aquatic plants (Acute toxicity)

:

Remarks: LC/EC/IC50 > 100 mg/l

Practically non toxic:

Based on available data, the classification criteria are not met.

Toxicity to fish (Chronic toxicity)

:

Remarks: Data not available

Toxicity to crustacean (Chronic toxicity)

:

Remarks: Data not available

Toxicity to microorganisms (Acute toxicity)

:

Remarks: LC/EC/IC50 > 100 mg/l

Practically non toxic:

Based on available data, the classification criteria are not met.

Persistence and degradability

Product:

Biodegradability

:

Remarks: Not readily biodegradable.

Bioaccumulative potential

Product:

Bioaccumulation

:

Remarks: Data not available

Partition coefficient: n-octanol/water

:

Remarks: Data not available

Mobility in soil

Product:

Mobility

:

Remarks: Floats on water.

Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues

:

Recover or recycle if possible.

It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations.

Do not dispose into the environment, in drains or in water courses

Waste product should not be allowed to contaminate soil or water.

Disposal should be in accordance with applicable regional,

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national, and local laws and regulations.

Local regulations may be more stringent than regional or national requirements and must be complied with.

Contaminated packaging : Remove all packaging for recovery or waste disposal.
Comply with any local recovery or waste disposal regulations.

14. TRANSPORT INFORMATION

International Regulations

ADR

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollution category : Not applicable

Ship type : Not applicable

Product name : Not applicable

Special precautions for user

Remarks : Special Precautions: Refer to Section 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

Additional Information : This product may be transported under nitrogen blanketing. Nitrogen is an odourless and invisible gas. Exposure to nitrogen enriched atmospheres displaces available oxygen which may cause asphyxiation or death. Personnel must observe strict safety precautions when involved with a confined space entry.

15. REGULATORY INFORMATION

National regulatory information

Hong Kong Dangerous Goods Ordinance (CAP. 295) - Dangerous Goods (General) Regulations.
Hong Kong Factories and Industrial Undertakings Ordinance (CAP. 59) - Factories and Industrial Undertakings (Dangerous Substances) Regulations.

Hong Kong Waste Disposal Ordinance (CAP. 354) Section 35 - Code of Practice on the Packaging, Labelling and Storage of chemical Wastes.

Other international regulations

The components of this product are reported in the following inventories:

AIIC : Listed

DSL : Listed

IECSC : Listed

ENCS : Listed

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KECI	: Listed
NZIoC	: Listed
PICCS	: Listed
TSCA	: Listed
TCSI	: Listed

16. OTHER INFORMATION

Abbreviations and Acronyms

AICS - Australian Inventory of Chemical Substances; AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code of the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

Further information

Training advice	: Provide adequate information, instruction and training for operators.
Other information	: A vertical bar () in the left margin indicates an amendment from the previous version.
Sources of key data used to compile the Safety Data	: The quoted data are from, but not limited to, one or more sources of information (e.g. toxicological data from Shell

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Health Services, material suppliers' data, CONCAWE, EU
IUCID date base, EC 1272 regulation, etc).

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

HK / EN