

Material Safety Data Sheet (MSDS)

Product name

LIVSEN SSSS WH1

1. PRODUCT AND COMPANY IDENTIFICATION

- 1) Product name LIVSEN SSSS WH1
- 2) Recommended use of the chemical and restrictions on use.
- Recommended use of the chemical Hygiene, living and medical (diaper, napkin, sanitary pad)
- Recommended use of restrictions on use
- 3) Information on manufacture / supplier
- Company Toray Polytech (Foshan) Co.,Ltd.
- Address No.6, Linghang Road, Jiujiang Avenue Jiujiang Town, Nanhai District, Foshan City, Guangdong, China
- Postcode 528203
- Email daniellh@torayamk.com
- Telephone (+86)-757-8651-2540

2. HAZARDS IDENTIFICATION

- 1) Hazard-Risk Classification No Data Applicable
- 2) GHS Label Elements
- Symbols
- Signal Word Not Applicable
- Hazard-Risk Statement Not Applicable
- Precautionary Statement
- Precaution Not Applicable
- Response Not Applicable
- Storage Not Applicable
- Disposal Not Applicable
- 3) Other hazards with are not included in classification (NFPA)
- Titanium Dioxide
- Health 0
- Flammability No Data
- Reactivity 0
- POLYPROPYLENE
- Health 1
- Flammability 1
- Reactivity 0

3. COMPOSITION / INFORMATION ON INGREDIENT

Chemical name	Other name	CAS No.	Content(%)
Titanium Dioxide		13463-67-7	<1.5
POLYPROPYLENE	1-PROPENE, HOMOPOLYMER	9003-07-0	>98.5

4. FIRST AID MEASURES

- 1) Eye contact
- Flush thoroughly with water for more than 20 minutes
- Immediately seek medical assistance
- Flush thoroughly with water for more than 20 minutes
- 2) Skin contact
- Remove all contaminated clothing and shoes
- Thoroughly wash the clothing and shoes before reuse

慶北 龜眉市 3工團2路 300
도레이첨단소재(주)
代表理事 金海尚

3) Inhalation

Immediately seek medical assistance
Immediately seek medical assistance
Move away from exposure for fresh air
Administer artificial respiration if breathing is stopped
Provide oxygen if breathing is difficult
Never give anything by mouth to an unconscious person

4) Swallowing

Immediately seek medical assistance

5) Notes to physician

Treat symptomatically
Do not administer any substance of adrenaline

5. FIRE-FIGHTING MEASURES

1) Suitable (and unsuitable) extinguishing media

Miniscule Fire: dry sand, dry chemical, alcohol resistant foam, waterfoam, foam, Co2
Large Fire: water/fog, foam (appropriate fire extinguisher)
High water pressure (inappropriate fire extinguisher)

2) Specific hazards arising from the chemical

Ignite due to heat, spark, flame
Explosion can occur when overheated
Unlikely but parts can ignite and burn
During fire, highly toxic gases may generate and cause irritation
Inhaling the substance can be harmful to the body
Parts of liquid substance can cause unconscious and suffocation

3) Special protective equipment
and precautions for fire-fighters

Use proper protective equipment
Keep a safe distance to extinguish fire
Take precautions that it can melt and flow
Portions can transfer at high temperatures
For the disposal of waste water, prevent its spread by digging a ditch

Titanium Dioxide

If there are no possible dangers, move the storage away from the fire affected zone
In case of fire-exposed-tank, extinguish from maximum distance or consider the use of unmanned fire-extinguishing systems
Cool fire-exposed-tank with plenty of water even after extinguishing
In case of rising sound or tank discoloration withdraw immediately away from the fire-exposed-tank
Keep away from the flame engulfed tank
When exposed to larger fire, use the unmanned fire extinguishing system and if impossible, move away and let it burn
For the disposal of waste water, prevent its spread by digging a ditch
If there are no possible dangers, move the storage away from the fire affected zone
Cool fire-exposed-tank with plenty of water even after extinguishing
In case of rising sound or tank discoloration withdraw immediately away from the fire-exposed-tank
Keep away from fire-engulfed tank

6. ACCIDENTAL RELEASE MEASURE

1) Personal precautions, protective equipment
and emergency procedures

Remove all source of ignition
Stop leakage if there are no risks
Note the materials and conditions to avoid
Ventilate the contaminated area
Do not walk around or touch the contaminated substance
Prevent dust generation
Until the appropriate amount of air is secured (oxygen concentration of 18% to 23.5%), do not enter without proper protective wear, including self-contained breathing apparatus or supplied-air respirator

慶北 龜眉市 3工團2路 300
도레이첨단소재(주)
代表理事 金海尚

2) Environmental precautions and protective procedures

Prevent entry into waterways, sewers, basements or confined areas

In case of miniscule spill, rinse the contaminated area with plenty of water

In case of miniscule spill, absorb with sand, non-flammable material into a suitable container and relocated to the specified area

3) Methods and materials for containment and cleaning up

In case of massive spill, create a ditch

Use a clean dry shovel to remove the contaminated material into the appropriate container and relocate to a specified area

In case of powder leakage, prevent dispersion by covering the area with a plastic sheet and keep dry

7. HANDLING AND STORAGE

1) Precautions for safe handling

Note the materials and conditions to avoid

Wash thoroughly after handling

Refer to the technical controls and personal protection at task

Avoid high temperatures

Take precautions to prevent leakage which can lower oxygen levels in confined areas and cause suffocation

Always check oxygen concentration levels before entry as high air concentration levels of harmful airborne particles can cause unconsciousness or even death

Take precautions to prevent leakage as it can cause serious suffocations

1) Precautions for safe handling

Take precautions to prevent substance leakage as it can instantly reach high toxic concentration levels

Do not spread as it can cause high concentration of harmful airborne particles

Keep below 20°C as it can evaporate and reach toxic concentration levels

Although unlikely to evaporate at 20°C, do not spread as it can quickly reach high toxic concentration levels

Although unlikely to evaporate at 20°C, do not spread or spray (especially if it is powder)

Although unlikely to evaporate at 20°C, do not spread as it can quickly reach high toxic concentration levels(especially if it is powder)

Always check oxygen concentration levels before entry

Do not spray or distribute as it can quickly evaporate

Seal tightly and store

2) Conditions for safe storage

Store in cool and dry area

Note the materials and conditions to avoid

8. EXPOSURE CONTROLS & PERSONAL PROTECTION

1) Exposure limits
for chemical, biological substances, etc.

national regulation

Titanium Dioxide

TWA - 10mg/m3

POLYPROPYLENE

TWA - 10mg/m3

ACGIH regulation

Titanium Dioxide

TWA - 10mg/m3

POLYPROPYLENE

No Data

Biological exposure standard

Titanium Dioxide

No Data

POLYPROPYLENE

No Data

2) Appropriate engineering controls

Maintain under the standard air concentration limit

3) Personal protective equipment

Personal protective equipment

Wear insulated gloves

Respiratory protection

慶北 龜眉市 3工團2路 300
도레이첨단소재(주)
代表理事 金海尚

Titanium Dioxide	Wear the China Occupational Safety and Health Agency certified respiratory care apparatus available for exposures to characteristics of chemophysical substances If the exposure level is lower than 100 mg / m3, wear a respirator of the appropriate ventilated type If the exposure level is lower than 250 mg / m3, wear a loose-fitting hood / helmet type electric breathing mask fitted with a suitable type of filter or a continuous flow dustproof mask If the exposure level is lower than 500 mg / m3, wear a face-shielded, electromechanical or air-fed, continuous-flow / pressure-demanded equipment If the exposure concentration is lower than 10000 mg / m3, wear a face type or helmet / hood type with appropriate filter, pressure-demanded ventilation mask If the exposure is below 100000 mg / m3, wear self-contained breathing apparatus (SCBA) or self-contained breathing apparatus with pressure-demand self-contained breathing apparatus (SCBA) with appropriate filter Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower facility. Wear chemical safety goggles
Tris(2,4-di-tert-butylphenyl) Phosphite	
POLYPROPYLENE	Wear the China Occupational Safety and Health Agency certified respiratory care apparatus available for exposures to characteristics of chemophysical
Eye protection	Use the appropriate chemical protective goggles and protective face mask Install an emergency shower and washing facility near the work site
Body protection	Wear the appropriate chemical resistant glove Wear the appropriate chemical resistant clothing

9. PHYSICAL AND CHEMICAL PROPERTIES

1) Appearance (physical state, color etc)	
Physical state	No Data
Color	No Data
2) Odor	No Data
3) Odor threshold	No Data
4) pH	No Data
5) Melting point/freezing point	No Data
6) Initial boiling point and boiling range	No Data
7) Flash point	No Data
8) Evaporation rate	No Data
9) Flammability (solid, gas)	No Data
10) Upper/lower flammability or explosive limits	No Data
11) Vapor pressure:	No Data
12) Solubility	No Data
13) Vapor density	No Data
14) Specific gravity	No Data
15) Partition coefficient (n-octanol/water)	No Data
16) Self-igniting temperature	No Data
17) Decomposition temperature	No Data
18) Viscosity	No Data
19) Molecular weight	No Data
Titanium Dioxide	
1) Appearance	
Physical state	Solid
Color	White
2) Odor	Odorless
3) Odor threshold	No Data
4) pH	(Mild(10% suspension))
5) Melting point/freezing point	1560 °C
6) Initial boiling point and boiling range	No Data
7) Flash point	No Data
8) Evaporation rate	No Data

慶北 龜眉市 3工團2路 300
도레이첨단소재(주)
 代表理事 **金海尚**

9) Flammability (solid, gas)	No Data
10) Upper/lower flammability or explosive limits	- / -
11) Vapor pressure:	No Data
12) Solubility	(Solubility: High degree concentrated sulfuric acid, hydrofluoric acid, alkali (2), Insoluble: hydrochloric acid, nitric acid, dilute sulfuric acid (2))
13) Vapor density	No Data
14) Specific gravity	(3.9~4.3)
15) Partition coefficient (n-octanol/water)	No Data
16) Self-igniting temperature	No Data
17) Decomposition temperature	No Data
18) Viscosity	No Data
19) Molecular weight	79.88

POLYPROPYLENE

1) Appearance	
Physical state	Solid
Color	Colorless (Half-transparent)
2) Odor	Odorless
3) Odor threshold	No Data
4) pH	No Data
5) Melting point/freezing point	165 ~170℃
6) Initial boiling point and boiling range	No Data
7) Flash point	No Data
8) Evaporation rate	No Data
9) Flammability (solid, gas)	No Data
10) Upper/lower flammability or explosive limits	- / -
11) Vapor pressure:	No Data
12) Solubility	(Insoluble)
13) Vapor density	No Data
14) Specific gravity	0.90 (20℃)
15) Partition coefficient (n-octanol/water)	No Data
16) Self-igniting temperature	375~400 ℃
17) Decomposition temperature	No Data
18) Viscosity	No Data
19) Molecular weight	(>40000)

10. STABILITY AND REACTIVITY

1) Chemical stability and possibility of hazardous reactions	
Titanium Dioxide	Likely to produce toxic gases at high temperatures Overheating can cause container explosion Unlikely but parts can ignite and burn Substance itself doesn't burn but toxic concentration levels will rise at high temperatures
POLYPROPYLENE	Stable under normal conditions Overheating can cause container explosion Unlikely but parts can ignite and burn In case of fire, irritation and toxic gases can be produced Inhaling the substance can be harmful to body Parts of liquid substance can cause unconscious and suffocation
2) Conditions to avoid	
Titanium Dioxide	Heat, spark flame and other igniting sources
POLYPROPYLENE	Heat, spark flame and other igniting sources
3) Incompatible materials:	

慶北 龜眉市 3工團2路 300
도레이첨단소재(주)
代表理事 金海尚

Titanium Dioxide
POLYPROPYLENE
POLYPROPYLENE
4) Hazardous decomposition products
Titanium Dioxide

POLYPROPYLENE

Combustible, reducing substances
Combustible substances
Irritation, toxic gas

Corrosive/Toxic fumes
Irritation, toxic gas
Irritation, corrosion, toxic gas
No Data

11. TOXICOLOGICAL INFORMATION

1) Information on the likely routes of exposure

Titanium Dioxide	No Data Possible absorption into body by inhaling Possible absorption into body by inhaling or digestive organs Possible absorption into body by skin, digestive organs, aerosol inhalation Possible absorption into body by steam inhalation Can be absorbed by inhalation, through skin and the digestive system
Tris(2,4-di-tert-butylphenyl) Phosphite	No Data Possible absorption into body by inhaling Possible absorption into body by inhaling or digestive organs Possible absorption into body by skin, digestive organs, aerosol inhalation Possible absorption into body by steam inhalation Possible absorption in body by inhalation, through skin, or the digestive tract.

2) Health hazards information

Acute toxic:

Oral

Titanium Dioxide	LD50 > 10000 mg/kg Rat
POLYPROPYLENE	LD50 > 8000 mg/kg Rat

Percutaneous

Titanium Dioxide	LD50 > 10000 mg/kg Rabbit
POLYPROPYLENE	No Data

Inhalation

Titanium Dioxide	LC50 > 6.82 mg/l 4 hr Rat
POLYPROPYLENE	No Data

Skin corrosive/irritant

Titanium Dioxide	Irritability test operated on rabbits show weak or non irritability results
POLYPROPYLENE	No Data

Serious eye damage/eye irritation

Titanium Dioxide	Weak irritability
POLYPROPYLENE	No Data

Respiratory sensitization

Titanium Dioxide	No Data
POLYPROPYLENE	No Data

Skin sensitization

Titanium Dioxide	Patch test result in human – negative
POLYPROPYLENE	No Data

Carcinogenicity:

Industrial Safety and Health Acts

Titanium Dioxide	No Data
POLYPROPYLENE	No Data

Notification of Ministry of Employment and Labor

Titanium Dioxide	No Data
------------------	---------

慶北 龜眉市 3工團2路 300
도레이첨단소재(주)
代表理事 金海尚

POLYPROPYLENE	No Data
IARC	
Titanium Dioxide	2B
POLYPROPYLENE	3
OSHA	
Titanium Dioxide	No Data
POLYPROPYLENE	No Data
ACGIH	
Titanium Dioxide	A4
POLYPROPYLENE	No Data
NTP	
Titanium Dioxide	No Data
POLYPROPYLENE	No Data
EU CLP	
Titanium Dioxide	No Data
POLYPROPYLENE	No Data
Germ Cell Mutagenicity	
Titanium Dioxide	Micronucleus/Chromosome aberration test on Mouse
POLYPROPYLENE	No Data
Reproductive toxicity	
Titanium Dioxide	No Data
POLYPROPYLENE	No Data
Specific target organ toxicity (single exposure)	
Titanium Dioxide	Fume irritates the respiratory tract
POLYPROPYLENE	No Data
Specific target organ toxicity (repeated exposure)	
Titanium Dioxide	Pneumoconiosis reported in workers exposed to the enviroment for more than 20 years
POLYPROPYLENE	No Data
Aspiration hazard	
Titanium Dioxide	No Data
POLYPROPYLENE	No Data

12. ECOLOGICAL INFORMATION

1) Ecotoxicity

Fish

Titanium Dioxide	No Data
POLYPROPYLENE	No Data

Shellfish

Titanium Dioxide	EC50 > 1000 mg/ℓ 48 hr
POLYPROPYLENE	No Data

Bird

Titanium Dioxide	No Data
POLYPROPYLENE	No Data

2) Persistence and degradability

Persistence

Titanium Dioxide	No Data
POLYPROPYLENE	No Data

Degradability

Titanium Dioxide	No Data
POLYPROPYLENE	No Data

3) Bioaccumulative potential

Bioaccumulation

慶北 龜眉市 3工團2路 300
도레이첨단소재(주)
代表理事 金海尚

Titanium Dioxide	No Data
POLYPROPYLENE	No Data
Biodegradation	
Titanium Dioxide	No Data
POLYPROPYLENE	No Data
4) Mobility in soil	
Titanium Dioxide	No Data
POLYPROPYLENE	No Data
5) Other adverse effects	
Titanium Dioxide	No Data
POLYPROPYLENE	No Data

13. DISPOSAL CONSIDERATIONS

1) Disposal method	
Titanium Dioxide	All disposal practices must be in compliance with all applicable federal or local laws and regulations
POLYPROPYLENE	All disposal practices must be in compliance with all applicable federal or local laws and regulations
2) Disposal precaution	
Titanium Dioxide	Dispose the related container in accordance to appropriate regulations
POLYPROPYLENE	Dispose of waste in accordance with local regulations

14. TRANSPORT INFORMATION

1) UN number(UN No.)	
Titanium Dioxide	No Data Available
POLYPROPYLENE	No Data Available
2) UN proper shipping name	
Titanium Dioxide	Not Applicable
POLYPROPYLENE	Not Applicable
3) Transport hazard class	
Titanium Dioxide	Not Applicable
POLYPROPYLENE	Not Applicable
4) Packing group (if applicable)	
Titanium Dioxide	Not Applicable
POLYPROPYLENE	Not Applicable
5) Marine pollution	
Titanium Dioxide	No Data
POLYPROPYLENE	No Data
6) Special precaution which a user to be aware of or needs to comply with in connection with transport or conveyance	
Fire emergency method	
Titanium Dioxide	Not Applicable
POLYPROPYLENE	Not Applicable
Release emergency method	
Titanium Dioxide	Not Applicable
POLYPROPYLENE	Not Applicable

15. REGULATORY INFORMATION

1) Safety use of chemicals in workplaces Act	
Titanium Dioxide	Regulation of Safety use, Product, Store, Transport, Load and UnLoad
POLYPROPYLENE	Regulation of Safety use, Product, Store, Transport, Load and UnLoad
2) Toxic Chemical Control Act	
Titanium Dioxide	No Data
POLYPROPYLENE	No Data
3) Dangerous Material Safety Control Act	
Titanium Dioxide	No Data

慶北 龜眉市 3工團2路 300
도레이첨단소재(주)
代表理事 金海尚

POLYPROPYLENE	No Data
4) Wastes Management Act	
Titanium Dioxide	No Data
POLYPROPYLENE	No Data
5) Other requirements in domestic and other countries	
Requirements in domestic	
Persistent organic pollutant management act	
Titanium Dioxide	Not Applicable
POLYPROPYLENE	Not Applicable
Requirements in other countries	
United States Official Information (OSHA)	
Titanium Dioxide	Not Applicable
POLYPROPYLENE	Not Applicable
United States Official Information (CERCLA)	
Titanium Dioxide	Not Applicable
POLYPROPYLENE	Not Applicable
United States Official Information (EPCRA 302)	
Titanium Dioxide	Not Applicable
POLYPROPYLENE	Not Applicable
United States Official Information (EPCRA 304)	
Titanium Dioxide	Not Applicable
POLYPROPYLENE	Not Applicable
United States Official Information (EPCRA 313)	
Titanium Dioxide	Not Applicable
POLYPROPYLENE	Not Applicable
United States Official Information (Rotterdam Convention)	
Titanium Dioxide	Not Applicable
POLYPROPYLENE	Not Applicable
United States Official Information (Stockholm Convention)	
Titanium Dioxide	Not Applicable
POLYPROPYLENE	Not Applicable
United States Official Information (Montreal Protocol)	
Titanium Dioxide	Not Applicable
POLYPROPYLENE	Not Applicable
European Union Classification Information (Confirmation Classification Result)	
Titanium Dioxide	Not Applicable
POLYPROPYLENE	Not Applicable
European Union Classification Information (Risk Phrases)	
Titanium Dioxide	Not Applicable
POLYPROPYLENE	Not Applicable
European Union Classification Information (Safety Phrases)	
Titanium Dioxide	Not Applicable
POLYPROPYLENE	Not Applicable

16. OTHER INFORMATION

1) Issuing date	2020-06-15
2) Revision number and date	
Revision number	0 (# of times)
Revision date	0
3) Others	

慶北 龜眉市 3工團2路 300
도레이첨단소재(주)
代表理事 金海尚

ISSUED BY: Toray Polytech (Foshan) Co.,Ltd.
Technical Team

Prepared by	Manager	Jihyun Lee
Authorized signature	Manager	Jihyun Lee

慶北 龜眉市 3工團2路 300
도레이첨단소재(주)
代表理事 金海尚