Chemical Safety Technical Instructions (SDS)

Polyester resin solution

Version number: V1.0.0.2 Report number: HGNM19NRS7

*** Compiled in accordance with GB/T 17519 and GB/T 16483**

1 Chemical Product and Company Identification

Products information

Chinese Name of Products	Polyester resin solution
English Name of Product	Polyester resin solution
Product model	SKYBON ES960S34
CAS No.	not applicable
EC No.	not applicable
Molecular formula	not applicable

Product Recommendation and Restricted Use

Recommended uses of Product	Coatings, inks, adhesives, and resin binders.
Limited use of products	No data available.

Safety Technical Specification Provider Information

Enterprise name	SK Chemicals（Yantai）Co.LTd
Enterprise address	#10, Xi'an RD, Yantai Economic and Technological district, Shandong Province,China
Zip code	-
Contact number	+86-5356392008
Fax number	
Enterprise Emergency Telephone	+86-5356392008

2 Hazards Identification

Summary of emergencies

Liquid. Flammable, its vapor and air mix, can form explosive mixtures. If swallowed, it may cause severe lung injury.

GHS Risk Category

Flammable liquid	Category 3
Inhalation hazard	Category 1

GHS Labels

Signal word	DANGER

Risk statement

H226	Flammable liquids and vapors
H304	Swallowing and entering the respiratory tract can be fatal

Precautionary statement

◆ Preventive measure

P210	Keep away from heat source/spark/open flame/hot surface.No Smoking.
P233	Keep the container airtight.
P240	Containers and receiving equipment are grounded/equipotentially connected.
P241	Use explosion-proof electrical/ventilation/lighting equipment.
P242	Only tools that do not spark can be used.
P243	Measures to prevent electrostatic discharge are taken.
P280	Wear protective gloves/protective clothing/protective eye patches/protective masks.

◆ Accident response

P331	No vomiting should be induced.
P301+P310	If swallowed by mistake: Call the detoxification center/doctor immediately.
P370+P378	In case of fire: use the appropriate extinguishing, medium mentioned in Part V of this report to extinguish the fire.
P303+P361+P353	For skin (or hair) contamination: remove/remove all contaminated clothes immediately. Wash skin/shower with water.

◆ Safe storage

P405	Storage must be locked.
P403+P235	Store in a well-ventilated place. Keep low temperature.

◆ Disposal

P501	Disposal of contents/containers in accordance with local/regional/national/international regulations.

Hazard description

◆ Physical and chemical hazards

	Flammable liquids, whose vapors are mixed with air, can form explosive mixtures.

◆ Health hazard

Inhalation	During normal production, swallowing the product and entering the respiratory tract can be fatal.
Ingestion	Accidental ingestion of this product may be harmful to individual health.

Skin contact	Entering the blood through cuts, abrasions or lesions may have harmful effects on the whole body.
Eye	Direct eye contact with this product can cause temporary discomfort.

◆ Environment hazard

	Refer to Chapter 12

3 Composition/Information on Ingredients

Component	Cas No.	EC No.	Content range (mass fraction,%)
Saturated polyester	Trade secret	-	40-50
Cyclohexanone	108-94-1	203-631-1	10-20
Naphtha solvent (petroleum), light aromatics	64742-95-6	265-199-0	20~40

4 First aid Measures

Description of first aid measures

ordinary suggestion	Emergency measures are usually required. Please show this SDS to the doctor who arrives at the scene.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes. If you have any discomfort, see a doctor.
Skin contact	Take off the contaminated clothes immediately. Wash your skin with plenty of soapy water and clean water. If you have any discomfort, see a doctor.
Ingestion	No vomiting. Don’t feed anything to the unconscious. Call the doctor or poisoning control center immediately.
inhalation	Immediately move the patient to fresh air to keep the breath open. If breathing is difficult, give oxygen. If the patient ingests or inhales the substance, mouth-to-mouth artificial respiration is not allowed. If breathing stops. Cardiopulmonary resuscitation was performed immediately. Seek medical treatment immediately.
Protection of Emergency Personnel	To ensure that health care workers understand the hazard characteristics of products and take their own protective measures to protect themselves and prevent the spread of pollution.

Advice for the protection of rescuers

1	Clear all fire sources and enhance ventilation.
2	Avoid contact with skin and eyes.
3	Avoid inhaling steam.
4	Use protective equipment, including breathing masks.

Special tips for doctors

1	According to the symptoms, we should deal with them pertinently.
2	Note that symptoms may be delayed.

Firefighting measures

Extinguishing medium

Suitable fire extinguishing medium	Small fire: dry chemical fire extinguishing agent, carbon dioxide, water or anti foam fire extinguishing agent; fire: water, water mist or anti foam fire extinguishing agent.
Improper fire extinguishing medium	Avoid using too strong water vapor to extinguish fire, because it may spread and disperse the flames.

Special hazards arising from this substance or mixture

1	It can form explosive mixtures with air.
2	Containers exposed to fire may leak content through pressure relief valves, thereby increasing fire and/or vapor concentration.
3	Steam may move to the ignition source and flash back.
4	Liquids and vapors are flammable. When heated, the container may explode.
5	Expansion or explosive decomposition may occur when heated or exposed to flame.

Fire extinguishing precautions and protective measures

1	When extinguishing a fire, you should wear a breathing mask (which meets the requirements of MSHA/NIOSH or equivalent) and a full-body protective clothing.
2	Fire extinguishing at a safe distance with adequate protection.
3	Prevent fire water from polluting surface and groundwater systems.

6 Accidental release measures

Operators protective measures, protective equipment and emergency handling procedures

1	Avoid inhaling steam, touching skin and eyes.
2	Beware of vapor accumulation to explosive concentrations.
3	Steam can accumulate in low-lying areas.
4	It is suggested that emergency personnel wear positive pressure self-contained breathing apparatus, anti-virus and anti-static clothing and chemical anti-permeability gloves.
5	Ensure adequate ventilation. Clear all ignition sources. Take anti-static measures.
6	Quickly evacuate the personnel to the safe area, away from the leakage area and in the upwind direction.
7	Use personal protective equipment. Avoid inhaling steam, smoke or gas.

Environmental protection measures

1	To ensure safety, take measures to prevent further leakage or spillover.
2	Avoid discharging into the surrounding environment.

Containment, Clearance and Disposal Materials of Leakage Chemicals

1	Clear all ignition sources and use fire-proof tools and riot-proof equipment.

2	When a small amount of leakage occurs, dry sand or inert adsorbent material can be used to absorb the leakage. When a large amount of leakage occurs, dyke construction is needed to control it.
3	Attachments or collections should be stored in appropriate sealed containers and disposed of in accordance with relevant local laws and regulations.

7 Handling and storage

Operational considerations

1	Avoid inhaling steam.
2	Only tools that do not spark can be used.
3	In order to prevent the vapor ignition caused by electrostatic discharge, all metal parts on the equipment should be grounded.
4	Use explosion-proof equipment.
5	Operate in a well-ventilated area.
6	Wear appropriate personal protective gear.
7	Avoid contact with skin and eyes.
8	Keep away from heat

Storage considerations

1	Keep the container airtight.
2	Store in a dry, cool and ventilated place.
3	Keep away from heat sources, sparks, open fires and hot surfaces.
4	Store away from incompatible materials and food containers.
5	Opened containers must be carefully re-sealed and kept upright to prevent leakage.

8 Exposure controls/personal protection

Control parameter

Occupational exposure limits

No data

Biological limit

Biological limit	No data

◆ Monitoring method

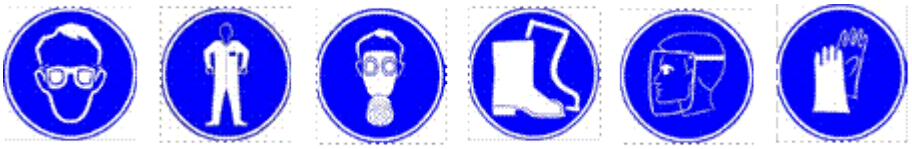
1	EN 14042 Workplace Air Procedure Guide for Assessing Exposure to Chemical or Biological Reagents.
2	GBZ/T 160.1~GBZ/T 160.81-2004 Workplace Air Toxic Substances Determination (Series Standards).

engineering control

1	Maintain adequate ventilation, especially in enclosed areas.
2	Make sure that there are eyewash and shower facilities near the workplace.

3	Use explosion-proof electrical appliances, ventilation, lighting and other equipment.
4	Set up emergency evacuation corridor and necessary risk relief area.
5	Operate according to good industrial hygiene and safety standards.

Personal protective equipment

General requirements	
Eye protection	Wear chemical goggles (in line with EU EN 166 or US NIOSH standards).
Hand protection	Wear chemical protective gloves (e.g. butyl rubber gloves).Suggestions for selection via EU EN 374, US F739 or Protective gloves tested by AS/NZS 2161.1 standard.
respiratory system protection	If the vapor concentration exceeds the occupational exposure limit or when symptoms such as irritation occur, use a full-face multi-function gas mask. (US) or AXBEK (EN 14387) gas mask barrel.
Skin and physical protection	Wear flame retardant and anti-static protective clothing and anti-static protective boots.

9 Physical and chemical properties

Physicochemical properties

Appearance and Character	Colorless to yellowish transparent viscous liquid
smell	Irritating taste
Odor threshold	No data
PH value	7(neutral)
Melting Point/Solidification Point (C)	No data
Initial Boiling Point and Boiling Range (C)	No data
Flash point (closed cup, C)	42 CC
Evaporation rate	No data
Flammability	inflammable
Upper/lower explosion limit [(v/v)]	Upper limit: no data; lower limit: no data
Vapor pressure	4 mmHg (20 C)
Vapor density (air = 1)	No data
Relative density (water = 1)	1.04(25 degrees Celsius)
Solubility (mg/L)	Insoluble in water
Octanol/water partition coefficient	No data
Spontaneous Combustion Temperature (?)	No data

Decomposition temperature	No data
Viscosity (mm2/s)	No data

10 Stability and reactivity

Reactivity	Decomposition or other chemical reactions may occur in contact with incompatible substances.
chemical stability	It is stable under the correct use and storage conditions.
Possibility of dangerous reactions	Contact with oxidizer is prone to ignition or explosion.
Conditions for avoiding contact	Incompatible substances, heat, flame and sparks.
Prohibited substance	Oxidants, chloroform, bromoform and other organic solvents.
Dangerous decomposition products	Under normal storage and use conditions, there will be no dangerous decomposition products.

11 Toxicological information

acute toxicity

Cas No.	Component name	LD50 (via mouth)	LD50 (percutaneous)	LC50 (inhalation, 4h)
108-94-1	Cyclohexanone	1535 mg/kg	948mg/kg	32080mg/m3
64742-95-6	Naphtha solvent (petroleum), light aromatic	>5000mg/kg	>2000mg/kg	>5610mg/m3

carcinogenicity

Other information

Polyester resin solution	
Skin corrosion/irritation	According to the available data, it does not meet the classification criteria.
Serious eye injury/irritation	According to the available data, it does not meet the classification criteria.
Skin sensitization	According to the available data, it does not meet the classification criteria.
Respiratory sensitization	According to the available data, it does not meet the classification criteria.
Reproductive toxicity	According to the available data, it does not meet the classification criteria.
Specific target organ systemic toxicity-single contact	According to the available data, it does not meet the classification criteria.
Systemic Toxicity of Specific Target Organs - Recurrent Contact	According to the available data, it does not meet the classification criteria.
Inhalation hazard	According to the available data, it does not meet the classification criteria.
Germ cell mutagenicity	According to the available data, it does not meet the classification criteria.
Additional Reproductive Toxicity Hazards	According to the available data, it does not meet the classification criteria.

12 Ecological information

Acute aquatic

Toxicity Component	Cas No.	Fish	Crustaceans	Algae/aquatic plants
Naphtha solvent (petroleum), light aromatics	64742-95-6	LC50 9.2 mg/l	LC50 4910 μg/l	EC50 2.9 mg/l

Chronic aquatic toxicity

Chronic aquatic toxicity	No data

Persistence and degradation

No data

Bioconcentration or bioaccumulation

Component	Cas No.	Bioconcentration	Potential
Naphtha solvent (petroleum), light aromatics	64742-95-6	10-2500	Higher

Mobility in Soil

Mobility in Soil	No data

Evaluation of PBT and PvB results

Component	Cas No.	PBT/vPvB Evaluation Results (Based on (EC) No 1907/2006)
Saturated polyester	Trade secret	Not belonging to PBT/vPvB
DBE	mixture	Not belonging to PBT/vPvB
Naphtha solvent (petroleum), light aromatics	64742-95-6	Not belonging to PBT/vPvB

13 Disposal considerations

Waste disposal

Waste chemicals	The relevant national and local regulations should be consulted before disposal. It is suggested that incineration be used.
Contaminated packaging	Residue hazards may still exist after the packaging is emptied. It should be kept away from heat and fire sources and be returned to suppliers for recycling if possible.
Abandoned matters needing attention	See 13.1 and 13.2.

14 Transport information

and labels

Transport label	
Marine pollutants	nothing

Maritime Danger Regulations (IMDG-CODE)

United Nations Dangerous Goods Number (UN No.)	1866
Correct United Nations transport name	Resin solution, flammable
Major dangerous categories of transport	3
Secondary dangerous categories of transport	nothing
Packaging category	III
Special provisions on transport	223 955
Limited quantity	5L
Exceptional quantity	E1
Marine pollutants (yes/no)	no
EmS No.	F-E, S-E

Air Transport (ICAO/IATA-DGR)

United Nations Dangerous Goods Number (UN No.)	1866
Correct United Nations transport name	Resin solution, flammable
Major dangerous categories of transport	3
Secondary dangerous categories of transport	nothing
Packaging category	III
Exceptional quantity	E1
Guidance on Limited Quantity Packaging for Passenger and Freight Transportation	Y344
Maximum Net Weight of Limited Quantity Transport Documents for Passenger and Freight Transport	10 L
Guidelines for Passenger and Freight Packaging	355
Maximum Net Weight of Passenger and Freight Documents	60 L
Guidelines for Freight Packaging	366
Maximum Net Weight of Freight Documents	220 L
Special provisions on transport	A3

Road Transport (UN-ADRERG) Code

	3L
United Nations Dangerous Goods Number (UN No.)	1866

Correct United Nations transport name	Resin solution, flammable
Major dangerous categories of transport	3
Secondary dangerous categories of transport	nothing
Packaging category	III
Special regulations	640E
Limited quantity	5 L
Exceptional quantity	E1
Packaging specification	P001 | IBC03 | LP01 | R001
Special Packaging Regulations	PP1
Regulations on Mixed Packaging	MP19
Specification for portable tanks and bulk containers	T2
Special requirements for portable tanks and bulk containers	TP1
ADR tank code	LGBF
Special Regulations for ADR Tanks	-
Vehicles transported in tanks	FL
Transportation Classification (Tunnel Traffic Limitation Code)	3 (D/E)
Special provisions for transport (packaging)	V12
Special provisions for transport (medium bulk containers)	-
Special provisions for transport (handling and operation)	-
Special provisions for transport (operations)	S2
Hazard Recognition Code	30
Remarks	-

Other information

Packaging method	Open steel drum. Ordinary wooden cases outside ampoules. Threaded glass bottles, iron cap pressure glass bottles, plastic bottles or metal barrels (cans) outside the ordinary wooden box, etc. Packing according to the method recommended by the manufacturer.
Transportation matters needing attention	Vehicle exhaust pipes for carrying this article must be equipped with fire retardants. It is forbidden to use mechanical equipment and tools which are prone to sparks for loading and unloading. During transportation, it should be protected from sunshine, rain and high temperature. The trough (tank) car used in transportation should have a grounding chain, and a hole separator can be installed in the trough to reduce the static electricity generated by the shock. It is strictly forbidden to mix with oxidants, acids, food and food additives. It is strictly forbidden to transport in bulk by wooden or cement vessels. Transportation vehicles should be equipped with firefighting equipment of corresponding varieties and quantities and emergency treatment equipment for leakage. Before transportation, check whether the packing container is complete and sealed. Dangerous signs and announcements shall be posted on the means of transport in accordance with the relevant transport requirements.

Regulatory information

International Chemicals List

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS	ENCS
Saturated polyester	X	|	X	|	X	X	|	|	X
dbe	|	|	|	|	|	|	|	|	|
Naphtha solvent (petroleum), light aromatics	|	|	|	|	|	|	|	|	X

[EINECS] List of Existing Chemicals in Europe
TSCA Chemicals List
[DSL] Canadian Chemicals List
[IECSC] List of Chemicals Existing in China
[NZIoC] List of Current Temporary Chemicals in New Zealand
[PICCS] Philippine Chemicals and Chemicals List
KECI List of Chemicals Existing in Korea
[AICS] List of Chemicals Existing in Australia
[ENCS] List of Existing and New Substances in Japan

China Chemicals Management List

Component	A	B	C	D	E	F	G	H
Saturated polyester	X	X	X	X	X	X	X	X
dbe	|	X	X	X	X	X	X	X
Naphtha solvent (petroleum), light aromatics	X	X	X	X	X	X	X	X

[A] Catalogue of Hazardous Chemicals (2015 Edition). Announcement No. 5 of the General Administration of Safety and Supervision, 2015
[B] Catalogue of Hazardous Chemicals for Key Environmental Management, No. 33 of the General Office of the Ministry of Environmental Protection, 2014
[C] List of Toxic Chemicals Strictly Restricted in China, Announcement No. 74 of the Ministry of Environmental Protection, 2017
[D] Catalogue of Narcotic Drugs and Psychotropic Substances (2013 edition). Circular No. 230 of the General Administration of Food and Drugs, 2013
[E] List of Hazardous Chemicals under Key Supervision (batches 1 and 2). Circular No. 95 of 2011 and No. 12 of 2013 of the General Administration of Safety and Supervision
[F] List of Controlled Ozone-depleting Substances Imported and Exported in China (batches 1-6). Announcement Series of Ministry of Environmental Protection 2000-2012
[G] List of Preventive Explosive Hazardous Chemicals (2017 Edition). Announcement of the Ministry of Public Security on May 11, 2017
[H] Catalogue of High Toxic Substances, Circular No. 142 of the Ministry of Health, 2003

notes
"" means that the substance is included in the regulations
"XX" means that there is no information or regulations for the time being.

16 Other information

Revised information

Date of establishment	2019/02/27
Revision date	2023/01/01
Reasons for revision	-

Reference

[1] International Programme for Chemical Safety: International Chemical Safety Card (ICSC), at http://www.ilo.org/dyn/icsc/showcard.home.
[2] International Agency for Research on Cancer, http://www.iarc.fr/.
[3] OECD Global Chemicals Information Platform, web site:
Http://www.echemportal.org/echemportal/index?PageID=0&request_locale=en.
[4] CAMEO Chemical Substances Database, USA, at http://cameochemicals.noaa.gov/search/simple.
[5] American Medical Library: Chemical Identification Database, web site: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp.
[6] EPA: Integrated Hazard Information System, http://cfpub.epa.gov/iris/.
[7] U.S. Department of Transportation: Emergency Response Guidelines, at http://www.phmsa.dot.gov/hazmat/library/erg.
[8] GESTIS-Hazardous Substances Database, Germany, at http://gestis-en.itrust.de/.

Abbreviation

CAS - Chemical Abstracts No. TSCA - List of Chemical Substances of TSCA, USA

PC-STEL-Short-term Permissible Contact Concentration PC-TWA-Time Weighted Average

DNEL - Derived Influenceless Level IARC - International Agency for Cancer Research

RPE-PNEC-Predicted Invalid Response Concentration of Respiratory Protection Equipment

LC50-50% lethal concentration LD50-50% lethal dose

NOEC - Effective Concentration EC50 - 50%

PBT-persistence, bioaccumulation, toxicity POW-octanol/water partition coefficient

BCF - Bioconcentration Factor (BCF) vPvB - Persistence, Bioaccumulation

CMR - Carcinogenic, Teratogenic and Reproductive Toxic Chemicals

IMDG - International Maritime Organization ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

UN - United Nations

ACGIH - American Conference on Industrial Health

NFPA - American Fire Protection Association

OECD - Organization for Economic Cooperation and Development

Disclaimer

This safety specification meets the requirements of GB/T 16483 and GB/T 17519 in China. The data comes from authoritative international databases and data submitted by enterprises. The other information is based on the knowledge that the company currently possesses.We try our best to ensure the correctness of all the information, but due to the diversity of information sources and the limitations of our knowledge, this document is only for users'reference.Users of safety technical specifications should judge the rationality of relevant information according to the purpose of use.We are not liable for any damage caused by the operation, storage, use or disposal of the product.