糖能科技
SUGAR ENERGY

SAFETYDATASHEET

Creation Date9-Mar-2022
Version3

5-hydroxymethylfurfural

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

产品描述: 5-羟基甲基呋喃糠醛
Product Description: **5-hydroxymethylfurfural**

Cat No.: **A12475**
Synonyms 5-(Hydroxymethyl)-2-furaldehyde
CAS-No 67-47-0
Molecular Formula C6 H6O3

Supplier: ZHE JIANG SUGAR ENERGY TECHNOLOGY CO.,LTD.
1818 Zhongguan West Road, Zhenhai District, Ningbo City, Zhejiang Province
New materials start up Park
Office Tel: +86 13732178919
Office Email: yikang@sugarenergy.com

Emergency Telephone Number Call +86 13732178919
Email address: yikang@sugareney.com
http://www.sugarenergy.com/

Recommended Use Laboratory chemicals.
Uses advised against No Information available

SECTION 2. HAZARD IDENTIFICATION

Physical State	**Appearance**	**Odor**
Solid	Yellow	Odorless

Emergency Overview

Combustibleliquid.Maybeharmfulifswallowed.Causesskinirritation.Causesseriouseyeirritation.Maycauserespiratory irritation.
Sensitivity to light.

Classification of the substance or mixture

Flammable liquids.	Category 4
Acute Oral Toxicity	Category 5
Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2
Specific target organ toxicity - (single exposure)	Category 3

Label Elements

SignalWord **Warning**

Hazard Statements
H227 - Combustible liquid
H303 - May be harmful if swallowed
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation

Precautionary Statements
Prevention
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing/eye protection/face protection
Response
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a POISON CENTER or doctor/physician if you feel unwell
P362 - Take off contaminated clothing and wash before reuse
P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction
Storage
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
Disposal
P501 - Dispose of contents/ container to an approved waste disposal plant

Physical and Chemical Hazards
Combustible material.
Health Hazards
May be harmful if swallowed. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.
Environmental hazards
Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants. Will likely be mobile in the environment due to its water solubility. The product is water soluble, and may spread in water systems.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No	Weight %
5-hydroxymethylfurfural	67-47-0	99

SECTION 4. FIRST AID MEASURES

Eye Contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact
Wash off immediately with plenty of water for at least 15 minutes. Get medical attention.

Inhalation

Remove to fresh air. Get medical attention. If not breathing, give artificial respiration.

Ingestion
Do NOT induce vomiting. Get medical attention.

Most important symptoms and effects
Difficulty in breathing. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

Self-Protection of the First Aider
Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

Notes to Physician
Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.

Extinguishing media which must not be used for safety reasons
No information available.

Specific Hazards Arising from the Chemical
Combustible material. Risk of ignition. Containers may explode when heated. Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition. Combustible material.

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions
Use personal protective equipment as required. Remove all sources of ignition. Avoid dust formation. Take precautionary measures against static discharges. Ensure adequate ventilation. Avoid contact with skin, eyes or clothing.

Environmental Precautions
Avoid release to the environment.

Methods for Containment and Clean Up
Remove all sources of ignition. Sweep up and shovel into suitable containers for disposal. Avoid dust formation. Use spark-proof tools and explosion-proof equipment.

Refer to protective measures listed in Sections 8 and 13.

SECTION 7. HANDLING AND STORAGE

Handling
Wear personal protective equipment/face protection. Keep away from open flames, hot surfaces and sources of ignition. Ensure adequate ventilation. Avoid dust formation. Avoid contact with skin, eyes or clothing. Avoid ingestion and inhalation.

Storage
Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks and flame. Keep under nitrogen. Keep refrigerated.

Specific Use(s)

Use in laboratories

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Monitoring methods
BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust MDHS70 General methods for sampling airborne gases and vapours

Exposure Controls

Engineering Measures
Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source.

Personal protective equipment

EyeProtection Goggles (European standard - EN166)

HandProtection Protectivegloves

Glovematerial	Breakthrough time	Glovethickness	EUstandard	Glovecomments
Nitrile rubber Neoprene Natural rubber PVC	See manufacturers recommendations	-	EN374	(minimumrequirement)

Inspect gloves beforeuse.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)
Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.
Remove gloves with care avoiding skin contamination.

Skin andbodyprotection Wear appropriate protective gloves and clothing to prevent skinexposure

RespiratoryProtection No protective equipment is needed under normal useconditions.

Largescale/emergencyuse UseaNIOSH/MSHAorEuropeanStandardEN136approvedrespiratorifexposurelimits are exceeded or if irritation or other symptoms areexperienced

Smallscale/Laboratoryuse Maintain adequateventilation

HygieneMeasures Handle in accordance with good industrial hygiene and safetypractice.

Environmentalexposurecontrols No informationavailable.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance Yellow
PhysicalState Solid

Odor Odorless

Odor Threshold	No data available	
pH	No information available	
Melting Point/Range	30 - 34 °C / 86 - 93.2 °F	
Softening Point	No data available	
Boiling Point/Range	114 - 116 °C / 237.2 - 240.8 °F	@ 1 mmHg
Flash Point	79 °C / 174.2 °F	**Method -** No information available
Evaporation Rate	Not applicable	Solid
Flammability (solid,gas)	No information available	
Explosion Limits	No data available	
Vapor Pressure	No information available	
Vapor Density	Not applicable	Solid
Specific Gravity / Density	No data available	
Bulk Density	No data available	
Water Solubility	Soluble	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
AutoignitionTemperature	No dataavailable	
DecompositionTemperature	No dataavailable	
Viscosity	Notapplicable	Solid
ExplosiveProperties		explosive air/vapour mixturespossible
OxidizingProperties	No informationavailable	
MolecularFormula	C6 H6O3	
MolecularWeight	126.11	

SECTION 10. STABILITY AND REACTIVITY

Stability Lightsensitive.

HazardousReactions No informationavailable.
HazardousPolymerization No informationavailable.

ConditionstoAvoid Avoiddustformation.Incompatibleproducts.Excessheat.Exposuretolight.Keepaway from open flames, hot surfaces and sources of ignition.

Materialstoavoid Strong oxidizing agents. Strong bases. Strong reducingagents.

Hazardous Decomposition Products Carbon monoxide (CO). Carbon dioxide (CO_2).

SECTION 11. TOXICOLOGICAL INFORMATION

ProductInformation No acute toxicity information is available for thisproduct

(a) acutetoxicity;

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
5-hydroxymethylfurfural	LD50 = 2500 mg/kg (Rat)		

(b) skincorrosion/irritation; Category2

(c) seriouseyedamage/irritation; Category2

(d) respiratory or skinsensitization;

Respiratory	No dataavailable
Skin	No dataavailable

(e) germcellmutagenicity;	No dataavailable Mutagenic effects have occurred in humans
(f) carcinogenicity;	No dataavailable There are no known carcinogenic chemicals in this product
(g) reproductivetoxicity;	No dataavailable
(h) STOT-singleexposure;	Category3
Results /Targetorgans	Respiratorysystem
(i) STOT-repeatedexposure;	No dataavailable
TargetOrgans	No informationavailable.
(j) aspirationhazard;	Not applicable Solid
OtherAdverseEffects	The toxicological properties have not been fullyinvestigated.
Symptoms / effects,both acute and delayed	Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicityeffects	Do not empty intodrains.
Persistence and Degradability **Persistence**	Soluble in water, Persistence is unlikely, based on informationavailable.
BioaccumulativePotential	Bioaccumulation isunlikely
Mobilityinsoil	The product is water soluble, and may spread in water systems Will likely be mobile inthe environment due to its water solubility Highly mobile in soils
Endocrine Disruptor Information	
PersistentOrganicPollutant	Thisproductdoesnotcontainanyknownorsuspectedsubstance
OzoneDepletionPotential	Thisproductdoesnotcontainanyknownorsuspectedsubstance

SECTION 13. DISPOSAL CONSIDERATIONS

Waste from Residues/Unused Products	Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.
ContaminatedPackaging	Dispose of this container to hazardous or special waste collectionpoint.
OtherInformation	Wastecodesshouldbeassignedbytheuserbasedontheapplicationforwhichtheproduct was used. Do not empty into drains.

SECTION 14. TRANSPORT INFORMATION

Road andRailTransport NotRegulated

IMDG/IMO Notregulated

IATA Notregulated

Special PrecautionsforUser No special precautionsrequired

SECTION 15. REGULATORY INFORMATION

International Inventories
X = listed, China (IECSC), Europe (EINECS/ELINCS/NLP), U.S.A. (TSCA), Canada (DSL/NDSL), Philippines (PICCS), Japan (ENCS), Australia (AICS), Korea (ECL).

Component	The Inventory of Hazardous Chemicals (2015 Edition)	List of dangerous goods GB 12268 - 2012	Taiwan Toxic Chemical Substances Inventory	IECSC	EINECS	TSCA	DSL	PICCS	ENCS	AICS	KECL
5-hydroxymethylfurfural	-	-	X	X	200-654-9	X	X	X	-	X	KE-20648

National Regulations

SECTION 16. OTHER INFORMATION

PreparedBy Health, Safety and EnvironmentalDepartment
CreationDate 15-Dec-2011
RevisionSummary SDS authoring systems update, replaces ChemGes SDS No.67-47-0/2.

Training Advice
Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.
Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.
First aid for chemical exposure, including the use of eye wash and safety showers.

Legend

CAS - ChemicalAbstractsService
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of NotifiedChemicalSubstances
PICCS - Philippines Inventory of Chemicals andChemicalSubstances
IECSC - Chinese Inventory of ExistingChemicalSubstances
KECL - Korean Existing and EvaluatedChemicalSubstances
TSCA - United States Toxic Substances Control Act Section8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic SubstancesList
ENCS - Japanese Existing and New ChemicalSubstances
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory ofChemicals

WEL - WorkplaceExposureLimit
ACGIH - American Conference of GovernmentalIndustrialHygienists
DNEL - Derived NoEffectLevel
RPE - RespiratoryProtectiveEquipment
LC50 - LethalConcentration50%
NOEC - No ObservedEffectConcentration
PBT - Persistent,Bioaccumulative,Toxic

TWA - Time WeightedAverage
IARC - International Agency for Research onCancer
Predicted No Effect Concentration(PNEC)
LD50 - Lethal Dose50%
EC50 - Effective Concentration50%
POW - Partition coefficientOctanol:Water
vPvB - very Persistent, veryBioaccumulative

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road
IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association
MARPOL - International Convention for the Prevention of Pollution from Ships

OECD - Organisation for Economic Co-operationandDevelopment
BCF -Bioconcentrationfactor

ATE - Acute ToxicityEstimate
VOC (volatile organiccompound)

Key literature references and sources for data
https://echa.europa.eu/information-on-chemicals
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Disclaimer

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

End of Safety Data Sheet