Safety Data Sheet

According to Hazard Communication Standard (29 CFR 1910.1200)

Succinic anhydride

Issue date: 07/14/2015 Version 1.0 Revision date: 07/14/2015

1. Product and Company Identification

Product name: **Succinic anhydride**

Synonyms: 2,5-Furandione, dihydro- (Cas Name)

CAS #: 108-30-5

Product code: -

Product use: Industrial use:
Industrial use as an intermediate in the production of substances and intermediates.
Industrial use as a monomer for the production of resins
Professional use:
Intermediate.
Laboratory chemicals.

Manufacturer/Supplier:

Supplier(Manufacturer): Polynt S.p.A.

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2. Hazard(s) identification

GHS classification:

Physical hazards:	Not classified	
Health hazards:	Acute toxicity-Oral	Category 4
	Serious eye damage/eye irritation	Category 2A
	Skin sensitization	Category 1
	Respiratory sensitization	Category 1
	specific target organ toxicity after single exposure	Category 3
Environmental hazards:	Not classified	

GHS label elements:

Hazard Pictograms:

Signal word: Danger

Hazard statement: Harmful if swallowed.
Causes serious eye irritation.
May cause an allergic skin reaction.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause respiratory irritation.

Precautionary statement:

Prevention: Avoid breathing dust/fume/gas/mist/vapors/spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear eye protection/face protection.

Response: If swallowed: Call a poison center/doctor if you feel unwell.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
Rinse mouth.
If eye irritation persists: Get medical advice/attention.
Call a poison center /doctor if you feel unwell.

Storage: Store in a well-ventilated place. Keep container tightly closed.
Store locked up.

Disposal: Dispose of contents/container in corroding with local regulation.

Other Hazards: Dust explosion hazards (See Section 9).

3. Composition / Information on Ingredients

Components	CAS#	Percent	GHS Classification
Succinic Anhydride	108-30-5	> 99.5%	H302 Acute Tox 4 H319 Eye Irrit. 2 H334 Resp. Sens. 1 H317 Skin Sens. 1 H335 STOT SE 3

4. First Aid Measures

First aid procedures:

Eye contact: In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Call a physician immediately.

Skin contact:	After contact with skin, wash immediately with plenty of soap and water. Consult a physician.
Inhalation:	Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration.
Ingestion:	Call a physician immediately. Clean mouth with water. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.
Notes to physician:	Treat symptoms.

5. Fire Fighting Measure

Flammable properties: Not flammable.

Extinguishing media:

Suitable extinguishing media:	Foam, powder, water spray.
Unsuitable extinguishing media:	Do not use water jets as they can disperse and spread fire.

Firefighting equipment/instructions: In the event of fire, wear self-contained breathing apparatus. Water mist may be used to cool closed containers. Use personal protective equipment to protect skin/eyes.

Hazardous combustion products: In combustion emits toxic fumes of carbon dioxide / carbon monoxide.

6. Accidental Release Measures

Personal precautions: Move any people not authorised to contain the emergency out of the area. Avoid coming in contact with the substance or handling containers without adequate protection. Use the personal protective equipment described in section 8. Use a respirator in the event of emissions/spillage of large quantities. Eliminate all sources of ignition. Remove all incompatible materials as outlined in section 10 of SDS. Avoid dust formation.

Environmental precautions: Contain the spillage as far as possible. Prevent spilled materials getting into the drainage system, wells, surface water or groundwater. In the case of leaks into a water course, drains, or if the product has contaminated the ground or vegetation, contact the local authorities.

Methods for cleaning up: Do not use equipment that can generate sources of ignition when cleaning. If possible, vacuum up the spilled material and/or absorb parts that can't be vacuumed up with inert materials (sand, earth, absorbent materials...) and place in suitable containers (separate liquids and solids) for disposal in accordance with section 13. After collection, ventilate and clean the affected area with water before granting access. Do not flush the water used for cleaning into watercourses or down drains.

7. Handling and Storage

Handling: Provide sufficient air exchange and/or exhaust in work rooms. Avoid contact with skin and eyes. Avoid accumulation of electrostatic charges, to prevent risk of powders exploding. Avoid formation of respirable particles. Avoid breathing dust. For precautions see section 2.2.

Storage: Eliminate all sources of combustion. Keep container hermetically closed in a dry and well ventilated environment. Do not store near heat sources or expose to direct sunlight, to preserve the quality of the product. Keep away from incompatible materials (see point 10.5). Keep away from food, feed and beverages.

8. Exposure Controls / Personal Protection

Control parameters:

OCCUPATIONAL EXPOSURE LIMITS (OEL):

INGREDIENT DATA: Not Available

EMERGENCY LIMITS:

Ingredient	TEEL-1	TEEL-2	TEEL-3
Succinic Anhydride	0.21 mg/m^3	2.4 mg/m^3	300mg/m^3

Ingredient	Original IDLH	Revised IDLH
Succinic Anhydride	Not Available	Not Available

Exposure controls:

Appropriate engineering controls: Use in a well-ventilated area.

Individual protection measures, such as personal protective equipment:

Eye / face protection: Goggles or protective visor.

Skin protection: The material the gloves are made of must be impermeable and stable when in contact with the substance. No specific information available on the suitability of the material and thickness of the gloves. Consult the glove manufacturer for specific information on the suitability of the gloves. Replace the gloves in the case of internal contamination, when punctured, or if external contamination cannot be removed. The actual duration of protection depends on the conditions of use. Wear protective clothing resistant to chemical substances.

Respiratory protection: Mask with P3 dust filter if solid or type A filter for vapours and organic gases with a boiling point > 65°C if molten (EN 149).

General hygiene Considerations:	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing.

9. Physical & Chemical Properties

Appearance:	
Physical state:	Solid
Form:	Solid flakes
Color:	White
Odor:	Characteristics
Odor threshold:	Not available
pH:	Not available
Vapor pressure:	0.00000286 mm Hg (25 °C)
Melting point/Freezing point:	119 °C
initial boiling point and boiling range:	263.5 °C
Flash point:	163 °C
Evaporation rate:	Not available
Flammability (solid, gas):	Non flammable
Explosion limits:	Not available
Vapor density:	Not available
Solubility (water):	Very soluble, 62.9 g/L, (20°C)
Partition coefficient octanol-water (Log Pow):	log Pow= 2.44 (40 °C)
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
Specific gravity:	Not available
Relative Density:	1.23 (20 °C)
Flammability limits in air, upper, %by volume:	Not available
Flammability limits in air, lower, % by volume:	35 g/m3
VOC (Volatile Organic Compounds):	Not available
Percent volatile:	Not available
Explosive properties:	Not explosive
Oxidising properties:	Not oxidizing
Molecular Formula:	$C_4H_4O_3$
Molecular Weight:	100.07
Other data:	

Viscosity: Not available
Dissociation constant: pKa= 4.67 (20 °C)

Dust explosion hazard:

Parameters:	Test Results:
Sample Characterisation:	
Particle Size Distribution of sample (µm):	=< 70
Moisture content (%):	0.12
Dust Explosion risk:	
Minimum Ignition Energy (MIE),(mJ):	
Without inductance (Electrostatic)(<25 µH):	10 - 15
With inductance (Mechanical) (1mH):	8 - 10
Test Temperature (°C):	20

10. Chemical Stability & Reactivity Information

Reactivity: Stable under normal conditions.

Chemical stability: Material is stable under normal conditions.

Conditions to avoid: Incompatible materials. Avoid the build-up of electrostatic charges. Avoid exposure to heat sources. Avoid the formation of dust.

Incompatible materials: Strong acids, strong bases, oxidizing agents, amines.

Hazardous decomposition products: Toxic fumes of carbon dioxide / carbon monoxide.

Possibility of hazardous reactions: None known when used as directed.

11. Toxicological Information

Toxicokinetics, metabolism and distribution:

Non-human toxicological data: Not available

Information on toxicological effects:

Acute toxicity:

LD50(Oral, Rat): 1794.9 mg/kg bw
LD50(Dermal, Rat): > 2000 mg/kg bw
LC50(Inhalation, Rat): Not available

Skin corrosion/Irritation: Not classified

Serious eye damage/irritation: Causes serious eye irritation.

Respiratory or skin sensitization:

Respiratory sensitization: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin sensitization: May cause an allergic skin reaction.

Germ cell mutagenicity: Not classified

Carcinogenicity: Not classified

Reproductive toxicity: Not classified

STOT- single exposure: May cause respiratory irritation.

STOT-repeated exposure: Not classified

Aspiration hazard: Not classified

12. Ecological Information

Toxicity:

Acute toxicity		Time	Species	Method	Evaluation	Remarks
LC50	> 100 mg/L	96h	Fish	OECD 203	N/A	N/A
EC50	> 100 mg/L	48h	Daphnia	OECD 202	N/A	N/A
EC50	> 100 mg/L	72h	Algae	OECD 201	N/A	N/A

Persistence and degradability: Readily biodegradable.

Bioaccumulative potential: The substance has a Partition coefficient (log Pow) < 3 and therefore is not considered to be a bioaccumulative.

Mobility in soil: The product is soluble in water.

Results of PBT&vPvB assessment: Based on available information, the substance is not a PBT/vPvB.

Other adverse effects: No known significant effects or critical hazards.

13. Disposal Considerations

Disposal instructions: Dispose of contents/container in accordance with local/regional/national/international regulations.

Contaminated packaging: Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport Information

DOT

Basic shipping requirements:	
UN number:	Not regulated
Proper shipping name:	Not regulated
Hazard class:	Not regulated
Packing group:	Not regulated
Environmental hazards:	No

IATA

UN number:	Not regulated
UN proper shipping name:	Not regulated
Transport hazard class(es):	Not regulated
Packing group:	Not regulated
Environmental hazards:	No

IMDG

UN number:	Not regulated
UN proper shipping name:	Not regulated
Transport hazard class(es):	Not regulated
Packing group:	Not regulated
Environmental hazards:	No

15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture:

Succinic Anhydride (CAS 108-30-5): is found on the following regulatory lists	"US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory" List.

16. Other Information

HMIS®ratings	Health: 3 Flammability: 1 Physical hazard: 0
NFPA ratings	Health: 3 Flammability: 1 Instability: 0

Acronyms:

ACGIH:	American Conference of Governmental Industrial Hygienist.
B:	Bioaccumulable.
BCF:	Bioconcentration Factor.
DOT:	U.S. Department of Transportation
EC50:	Effective Concentration 50 (that produces an effect (other than death) for 50% of organisms test).
EPA:	Environmental Protection Agency.
GHS:	Globally Harmonized System of Classification and Labeling of Chemicals
IATA:	International Air Transport Association.
IBC:	International code for the construction and equipment of ships carrying dangerous Bulk Chemicals.
ICAO:	International Civil Air-transport Organisation.
IDLH:	Immediately Dangerous to Life and Health
IMDG:	International Maritime Dangerous Goods code.
Koc:	Organic carbon/water partition coefficient (adsorpion coefficient).
Kow/Pow:	n-octanol/water partition coefficient.
LC50:	Lethal Concentration for 50% of animal test.
LD50:	Lethal Dose for 50% test animal.
P:	Persistent.
PBT:	Persistent, Bioaccumulable and Toxic.
SDS:	Safety Data Sheet.
STOT:	Specific target organ toxicity
TEELs;	Temporary Emergency Exposure Limits
TLV:	Threshold Limit Value.
TLV-C:	Threshold Limit Value - Ceiling.
TLV-STEL:	Threshold Limit Value - Short Term Exposure Limit.
TLV-TWA:	Threshold Limit Value - Time Weighted Average.
vPvB:	very Persistent and very Bioaccumulable.

Disclaimer: The information in the sheet was written based on the best knowledge and experience currently available.

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