

POLYSORBATE 20 (TWEEN 20)

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SECTION 1: IDENTIFICATION

1.1 GHS Product identifier:

POLYSORBATE 20 (TWEEN 20)
Polyoxyethylene (20) sorbitan monolaurate; PEG(20) sorbitan monolaurate; INS 432
CAS: 9005-64-5

Other means of identification:

Not relevant

1.2 Recommended use of the chemical and restrictions on use:

Relevant uses: Nonionic surfactant/emulsifier for food (INS 432), pharmaceutical, cosmetic and industrial formulations; solubiliser and dispersing agent; wetting agent. For industrial/commercial user only.
Uses advised against: All uses not specified in this section or in section 7.3. Use beyond permitted food-additive limits laid down under applicable food safety regulations.

1.3 Supplier's details:

SURAJ CHEMICALS
No 92, Govindappa Naicken Street, Shiva Complex, Chennai – 600001, Tamil Nadu, India
Tel: +91 - 7092722822, +91 - 9840284032 / +91 - 44 - 25393652, 42130281
Email: sales@surajchemicals.com | Website: www.surajchemicals.com
GST No: 33ACEPV8190L1ZZ

1.4 Emergency phone number:

Emergency Contact No: +91 - 7092722822, +91 - 9840284032

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture:

GHS:
Classification of this product has been carried out in accordance with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS). Based on available data, Polysorbate 20 does not meet the criteria for classification as hazardous.

Not classified as hazardous under GHS criteria (based on available data).

Note: as with many surfactants, direct, repeated or prolonged contact with concentrated product may cause mild, transient eye irritation; this does not meet GHS classification criteria – see section 11.

2.2 GHS label elements, including precautionary statements:

GHS: No signal word required

Hazard statements:

None (not classified).

Precautionary statements:

P264: Wash hands thoroughly after handling.
P280: Wear protective gloves/eye protection when handling the concentrate.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501: Dispose of contents/container in accordance with local regulations.

2.3 Other hazards which do not result in classification:

Spilled product is slippery when wetted/diluted. Not a PBT or vPvB substance.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances:

Chemical description: Polysorbate 20 (nonionic ethoxylated sorbitan ester surfactant)
In accordance with Annex 4.3.3 of the GHS, the product contains:

Identification	Chemical Name / Classification	Concentration
CAS: 9005-64-5	Polysorbate 20 — Not classified	≥98% (technical/food/pharma grade, typical)

To obtain more information on the hazards of the substances, consult sections 11, 12 and 16.

3.2 Mixtures:

Non-applicable

SECTION 4: FIRST AID MEASURES

4.1 Description of necessary first-aid measures:

Not expected to cause harm under normal conditions of use. Request medical assistance if symptoms occur, showing this SDS.

By inhalation:

Not a likely route of exposure (low volatility liquid). If mist is inhaled and discomfort occurs, move to fresh air and keep at rest.

By skin contact:

Wash skin with soap and water. Remove contaminated clothing. Seek medical advice if irritation develops (unlikely).

By eye contact:

Rinse immediately with plenty of water for at least 15 minutes, holding eyelids apart. Remove contact lenses, if present and easy to do. Seek medical advice if irritation persists.

By ingestion:

Rinse mouth with water. Not expected to require specific treatment given the product's use as a food/pharmaceutical excipient; seek medical advice if large quantities are swallowed accidentally outside intended dosing.

4.2 Most important symptoms/effects, acute and delayed:

No significant adverse effects expected under normal conditions of use; mild, transient irritation possible with concentrated product. See section 11.

4.3 Indication of immediate medical attention and special treatment needed, if necessary:

Not relevant

SECTION 5: FIRE-FIGHTING MEASURES

- 5.1 Suitable extinguishing media:**
Suitable: Water spray/fog, foam, dry chemical powder, carbon dioxide (CO²).
Unsuitable: None known.
- 5.2 Specific hazards arising from the chemical:**
Combustible liquid with a high flash point; will not readily ignite under normal ambient conditions. On combustion may release carbon monoxide and carbon dioxide.
- 5.3 Special protective actions for fire-fighters:**
Wear self-contained breathing apparatus and full protective clothing in case of a large fire. Cool fire-exposed containers with water spray.
- Additional provisions:**
Contain fire-fighting water/run-off; note foaming may occur due to surfactant properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

- 6.1 Personal precautions, protective equipment and emergency procedures:**
For non-emergency personnel:
Spilled material is slippery – avoid walking through spill. Use PPE described in section 8. Ventilate the area.
For emergency responders:
Wear appropriate PPE as per section 8. No special measures beyond routine good industrial hygiene practice.
- 6.2 Environmental precautions:**
Prevent large spillages from entering drains or watercourses, where surfactant properties may cause foaming. Low environmental hazard expected for small quantities.
- 6.3 Methods and materials for containment and cleaning up:**
Contain spillage with absorbent inert material (sand, vermiculite, absorbent granules). Collect into suitable labelled containers for recovery or disposal. Clean residual area with water; take care of slip hazard due to surfactant properties.
- 6.4 Reference to other sections:**
See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

- 7.1 Precautions for safe handling:**
A. General precautions for safe use:
Handle with normal industrial hygiene practice. Avoid prolonged, unnecessary skin and eye contact with the concentrate. Keep containers closed when not in use.
B. Technical recommendations for the prevention of fires and explosions:
No special precautions beyond normal good practice; product is not readily flammable under ambient storage conditions.
C. Technical recommendations on general occupational hygiene:
Do not eat, drink or smoke while handling in bulk industrial settings. Wash hands after handling.
D. Technical recommendations to prevent environmental risks:
Avoid release of bulk quantities to the environment.
- 7.2 Conditions for safe storage, including any incompatibilities:**
A. Specific storage requirements:
- | | |
|---------------|---|
| Minimum Temp. | Ambient (product may thicken/cloud at low temperature and re-liquefy on warming) |
| Maximum Temp. | 30°C |
| Maximum time | Typical value – refer to current specification sheet (commonly 24 months, unopened) |
- B. General conditions for storage:**
Store in tightly closed original containers in a cool, dry place away from direct sunlight, heat and strong oxidising agents. For additional information see subsection 10.5.
- 7.3 Specific end use(s):**
Used as an emulsifier/surfactant in food, pharmaceutical, cosmetic and industrial formulations. Except for the instructions already specified, no special recommendation is required.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

- 8.1 Control parameters:**
No specific occupational exposure limit (OEL) has been established for Polysorbate 20 under the Factories Act, 1948 (as amended).

Identification	Occupational Exposure Limit Type	Value
Polysorbate 20 CAS: 9005-64-5	Not established	Not established

- 8.2 Appropriate engineering controls:**
General ventilation is normally sufficient. Use local exhaust ventilation if mist is generated during processing.
- B. Respiratory protection:**
Not normally required under normal handling conditions.
- C. Specific protection for the hands:**
Protective gloves (e.g., nitrile) recommended for prolonged or repeated handling of the concentrate.
- D. Eye and face protection:**
Safety glasses recommended when handling the concentrate or where splashing may occur.
- E. Bodily protection:**
Standard industrial workwear; apron where splash exposure is likely.
- F. Additional emergency measures:**
Eyewash station and washing facilities should be available in the work area.
- Environmental exposure controls:**
Avoid large-scale release to the environment. See subsection 7.1.D.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

- 9.1 Information on basic physical and chemical properties:**

Appearance	
Physical state at 20°C	Liquid (viscous oil)
Appearance	Clear to slightly hazy, viscous liquid
Color	Pale yellow to amber
Odor	Faint, characteristic
Odour threshold	Not established

Volatility	
Boiling point at atmospheric pressure	>100°C (decomposes; low volatility)
Vapour pressure at 20°C / 50°C	Negligible
Evaporation rate at 20°C	Negligible
Product Description	
Density / Relative density at 20°C	~1.10 g/cm³
Dynamic / Kinematic viscosity	Typical value – refer to current specification sheet (viscous liquid, ~300–500 mPa.s typical)
Concentration	≥98% (typical)
pH	~6.0–7.0 (1% aqueous solution)
Vapour density at 20°C	Not relevant
Partition coefficient n-octanol/water 20°C	Not established (amphiphilic nonionic surfactant)
Solubility in water at 20°C	Miscible/soluble (self-dispersing, forms micellar solutions)
Decomposition temperature	Typical value – refer to current specification sheet
Melting point/freezing point	~-5 to -10°C (pour point, typical; may thicken at lower temperatures)
Flammability	
Flash Point	>110°C (closed cup, typical)
Flammability (solid, gas)	Not applicable (liquid); not readily flammable
Autoignition temperature	Not established
Lower / Upper flammability limit	Not established
Particle Characteristics	
Median equivalent diameter	Non-applicable (liquid)

9.2 Other information:

Explosive properties	Not explosive
Oxidising properties	Not oxidising
Corrosive to metals	Not corrosive to metals
Heat of combustion	Typical value – refer to current specification sheet
Surface tension at 20°C	Low (surface-active agent; typical value – refer to current specification sheet)
Refraction index	Typical value – refer to current specification sheet

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:
Stable under normal conditions of use and storage. May slowly hydrolyse/oxidise on prolonged exposure to strong acids/alkalis, heat or oxidising agents.

10.2 Chemical stability:
Chemically stable under the indicated conditions of storage, handling and use.

10.3 Possibility of hazardous reactions:
Under the specified conditions, hazardous reactions are not expected.

10.4 Conditions to avoid:

Shock/Friction	Contact with Air	Increase in Temperature	Sunlight	Humidity
Not applicable	Not applicable	Avoid high temperatures (gradual degradation)	Avoid prolonged direct exposure	Not particularly sensitive

10.5 Incompatible materials:

Strong Oxidisers	Strong Acids	Strong Alkalis	Heat Sources
Avoid contact	Avoid contact (hydrolysis)	Avoid contact (hydrolysis)	Keep away

10.6 Hazardous decomposition products:
None expected under normal conditions. Thermal decomposition at high temperature may generate oxides of carbon.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:
Polysorbate 20 has a very low order of acute toxicity and a long history of safe use as a food, pharmaceutical and cosmetic emulsifier.

A. Ingestion (acute effect):
Low acute oral toxicity. Large doses may cause mild, transient gastrointestinal discomfort (laxative-type effect), consistent with its use as a food/pharmaceutical excipient.

B. Inhalation (acute effect):
Not a likely route of exposure due to low volatility. Classification criteria for acute inhalation toxicity are not met based on available data.

C. Contact with skin and eyes (acute effect):
Not expected to be irritating to skin under normal conditions of use. Concentrated product may cause mild, transient eye irritation.

D. CMR effects (carcinogenicity, mutagenicity, reproductive toxicity):
Classification criteria for carcinogenicity, mutagenicity and reproductive toxicity are not met based on available data. IARC: Not listed.

E. Sensitizing effects:
Classification criteria for respiratory or skin sensitisation are not met based on available data.

F. Specific target organ toxicity (STOT) – single exposure:
Classification criteria are not met based on available data.

G. Specific target organ toxicity (STOT) – repeated exposure:
Classification criteria are not met based on available data.

H. Aspiration hazard:
Classification criteria are not met based on available data for this grade.

Product-specific toxicological information:

Identification	Acute Toxicity	Genus

Polysorbate 20	LD50 oral: >2000 mg/kg (low acute toxicity)	Rat
CAS: 9005-64-5	LD50 dermal: >2000 mg/kg	Rabbit

SECTION 12: ECOLOGICAL INFORMATION

Not expected to be significantly hazardous to the aquatic environment at use concentrations; readily/inherently biodegradable.

12.1 Toxicity:

Acute Toxicity	Species	Genus
LC50: Typical value – refer to current specification sheet (>10 mg/L, low acute hazard range reported for ethoxylated sorbitan esters)	Non-applicable	Fish
EC50: Typical value – refer to current specification sheet	Non-applicable	Crustacean

12.2 Persistence and degradability:

Expected to be readily/inherently biodegradable (consistent with other polyoxyethylene sorbitan ester surfactants).

12.3 Bioaccumulative potential:

Low bioaccumulation potential due to high water solubility and biodegradability.

12.4 Mobility in soil:

Koc	Henry	Dry Soil	Moist Soil
Low	Low	High mobility	High mobility

12.5 Results of PBT and vPvB assessment:

Does not meet PBT/vPvB criteria based on available data.

12.6 Other adverse effects:

Not described

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Disposal methods:

Dispose of in accordance with local, state and national regulations. Where possible, recover/recycle. Do not discharge large quantities to drains or water courses (foaming). Empty containers may retain product residue – handle accordingly.

Refer to national and local regulations on waste management.

SECTION 14: TRANSPORT INFORMATION

Transport of dangerous goods by land (ADR 2023 / RID 2023):

14.1 UN number	Not regulated as dangerous goods
14.2 UN proper shipping name	Non-applicable
14.3 Transport hazard class(es)	Non-applicable
14.4 Packing group	N/A
14.5 Environmental hazard	No
14.6 Special precautions for user	Physico-chemical properties: see section 9
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by sea (IMDG 41-22):

14.1 UN number	Not regulated as dangerous goods
14.2 UN proper shipping name	Non-applicable
14.3 Transport hazard class(es)	Non-applicable
14.4 Packing group	N/A
14.5 Marine pollutant	No
14.6 Special precautions for user	Non-applicable
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by air (IATA/ICAO 2024):

14.1 UN number	Not regulated as dangerous goods
14.2 UN proper shipping name	Non-applicable
14.3 Transport hazard class(es)	Non-applicable
14.4 Packing group	N/A
14.5 Environmental hazard	No
14.6 Special precautions for user	Non-applicable
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations specific for the product in question:

It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of local circumstances. Where used as a food additive, compliance with FSSAI permitted limits for INS 432 applies.

Other legislation:

Food Safety and Standards Act, 2006 and Rules/Regulations made thereunder (for food-grade use)
The Factories Act, 1948 (Act No. 63 of 1948), as amended by the Factories (Amendment) Act, 1987 (Act 20 of 1987)
Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 (not applicable – product not classified as hazardous)

SECTION 16: OTHER INFORMATION

Legislation related to safety data sheets:

This safety data sheet has been designed in accordance with Annex 4 – Guidance on the preparation of Safety Data Sheets of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Texts of the legislative phrases mentioned in sections 2 and 3:

Not classified – no hazard statements apply to this product.

Advice related to training:

Minimal training is recommended to familiarise staff handling this product with good industrial hygiene practice and the contents of this safety data sheet.

Principal bibliographical sources:

Published GHS classification references and standard commercial/regulatory SDS databases for Polysorbate 20, CAS 9005-64-5.

Abbreviations and acronyms:

ADR: European agreement concerning the international carriage of dangerous goods by road | IMDG: International maritime dangerous goods code | IATA: International Air Transport Association | ICAO: International Civil Aviation Organisation | LD50: Lethal Dose 50 | LC50: Lethal Concentration 50 | EC50: Effective Concentration 50 | Koc: Partition coefficient of organic carbon | IARC: International Agency for Research on Cancer

The information contained in this safety data sheet is based on sources, technical knowledge and current legislation, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product; it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within Suraj Chemicals' awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.

END OF SAFETY DATA SHEET