

METHYL SALICYLATE (WINTERGREEN OIL, SYNTHETIC)

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SECTION 1: IDENTIFICATION

1.1 GHS Product identifier:

METHYL SALICYLATE (WINTERGREEN OIL, SYNTHETIC)
Methyl 2-Hydroxybenzoate; Oil of Wintergreen; Betula Oil (synthetic)
CAS: 119-36-8

Other means of identification:

Not relevant

1.2 Recommended use of the chemical and restrictions on use:

Relevant uses: Flavouring agent (food and confectionery, in strictly regulated low concentrations); fragrance ingredient; active ingredient/excipient in topical analgesic (counter-irritant) pharmaceutical and veterinary liniments/ointments; chemical intermediate. For industrial/commercial user only.
Uses advised against: All uses not specified in this section or in section 7.3. Not for direct unsupervised consumer use in concentrated/undiluted form.

1.3 Supplier's details:

SURAJ CHEMICALS
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1.4 Emergency phone number:

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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).

Acute Tox. 4	Acute oral toxicity, Category 4, H302
Skin Irrit. 2	Skin irritation, Category 2, H315
Eye Irrit. 2	Eye irritation, Category 2, H319
Aquatic Chronic 3	Hazardous to the aquatic environment, chronic hazard, Category 3, H412

Methyl salicylate is a well-characterised ester with a standard, publicly documented commercial GHS classification. It is harmful if swallowed and may cause mild skin and eye irritation on direct contact. In children, accidental ingestion of concentrated methyl salicylate (e.g. undiluted wintergreen oil) can be particularly toxic due to rapid dermal/oral absorption and salicylate toxicity; handle and store accordingly.

2.2 GHS label elements, including precautionary statements:

GHS: Warning

Hazard statements:

Acute Tox. 4: H302 – Harmful if swallowed.
Skin Irrit. 2: H315 – Causes skin irritation.
Eye Irrit. 2: H319 – Causes serious eye irritation.
Aquatic Chronic 3: H412 – Harmful to aquatic life with long lasting effects.

Precautionary statements:

P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection.
P301+P312: IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P302+P352: IF ON SKIN: Wash with plenty of water.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P330: Rinse mouth.
P332+P313: If skin irritation occurs: Get medical advice/attention.
P337+P313: If eye irritation persists: Get medical advice/attention.
P501: Dispose of contents/container in accordance with local/national regulations.

2.3 Other hazards which do not result in classification:

Readily absorbed through intact skin; large-area topical application or occlusive dressing may result in systemic salicylate absorption. Not identified as a PBT or vPvB substance, though it is classified as Aquatic Chronic 3 as noted above.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances:

Chemical description: Methyl Salicylate – the methyl ester of salicylic acid (2-hydroxybenzoic acid), produced synthetically to match the principal constituent of natural wintergreen/sweet birch oil
In accordance with Annex 4.3.3 of the GHS, the product contains:

Identification	Chemical Name / Classification	Concentration
CAS: 119-36-8	Methyl Salicylate — Acute Tox. 4: H302; Skin Irrit. 2: H315; Eye Irrit. 2: H319; Aquatic Chronic 3: H412 – Warning	≥99.0% (synthetic, 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:

Request medical assistance immediately in case of ingestion or significant exposure, showing the SDS of this product.

By inhalation:

Remove the person affected to fresh air and keep at rest. Seek medical attention if discomfort continues.

By skin contact:
Remove contaminated clothing. Wash the affected skin thoroughly with plenty of water and soap. Seek medical attention if irritation develops or persists, or if large skin areas have been exposed (risk of systemic absorption).

By eye contact:
Rinse eyes immediately and thoroughly with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Remove contact lenses if present and easy to do. Seek medical attention promptly.

By ingestion/aspiration:
Do NOT induce vomiting. Rinse the mouth with water. Seek immediate medical/poison-centre attention, showing this SDS – ingestion of even small quantities of concentrated methyl salicylate can be hazardous, particularly in children, due to salicylate toxicity.

4.2 Most important symptoms/effects, acute and delayed:
Ingestion may cause nausea, vomiting, abdominal pain and, at higher doses, signs of salicylate toxicity (e.g. hyperventilation, tinnitus, confusion). Skin and eye irritation as described in Section 2. See Section 11 for further toxicological detail.

4.3 Indication of immediate medical attention and special treatment needed, if necessary:
Treat as salicylate exposure if ingestion is suspected or significant dermal exposure has occurred; seek medical/poison-centre guidance promptly. No specific antidote; supportive/symptomatic treatment.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable extinguishing media:
Suitable: Water spray/fog, foam, dry chemical powder, carbon dioxide (CO₂).
Unsuitable: High-pressure water jet, which may scatter and spread burning liquid.

5.2 Specific hazards arising from the chemical:
Combustible liquid. On heating, may release irritating/toxic fumes including oxides of carbon. Vapours may form flammable mixtures with air above the flash point (see Section 9).

5.3 Special protective actions for fire-fighters:
Evacuate non-essential personnel. Wear self-contained breathing apparatus (SCBA) and full protective clothing. Cool fire-exposed containers with water spray if safe to do so.

Additional provisions:
Contain fire-fighting water run-off to prevent entry into drains or water courses, given the product's aquatic toxicity classification.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:
For non-emergency personnel:
Avoid skin and eye contact and inhalation of vapour. Use the personal protective equipment described in Section 8. Ensure adequate ventilation. Eliminate ignition sources.

For emergency responders:
Wear protective equipment as per Section 8. Keep unprotected persons away.

6.2 Environmental precautions:
Prevent the product from entering drains, waterways or soil, given its classification as harmful to aquatic life with long-lasting effects (H412). Contain spillage and notify the relevant authority in case of significant environmental release.

6.3 Methods and materials for containment and cleaning up:
Contain the spill with inert absorbent material (sand, earth, vermiculite, or proprietary absorbent). Collect in a suitable closed, labelled container for recovery or disposal. Avoid generating vapour; ventilate the area.

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:
Avoid contact with skin and eyes and inhalation of vapour. Use with adequate ventilation. Wash hands and exposed skin thoroughly after handling. Do not use near food preparation surfaces outside controlled, regulated flavouring applications.

B. Technical recommendations for the prevention of fires and explosions:
Keep away from open flames, sparks and other ignition sources. Use grounded/bonded equipment during bulk transfer to control static discharge.

C. Technical recommendations on general occupational hygiene:
Do not eat, drink or smoke while handling. Wash hands and exposed skin thoroughly after handling and before breaks.

D. Technical recommendations to prevent environmental risks:
Avoid release to the environment (see Section 12). Keep containers tightly closed. Provide secondary containment for bulk storage where appropriate.

7.2 Conditions for safe storage, including any incompatibilities:
A. Specific storage requirements:

Storage temperature	Cool, dry place, below 30°C
Container	Tightly closed, in original labelled container, away from children/unauthorised access given toxicity if ingested
Shelf life (typical)	24 months from manufacture, unopened (typical value – refer to current specification sheet)

B. General conditions for storage:
Store in a cool, dry, well-ventilated place away from direct sunlight, heat sources, open flames and incompatible materials (Section 10). Keep locked/secured where accidental access by children or untrained personnel is possible, given its oral toxicity.

7.3 Specific end use(s):
Flavouring agent (strictly regulated low concentration); fragrance ingredient; topical analgesic/counter-irritant pharmaceutical active; chemical intermediate. Refer to product-specific technical data sheet for application guidance.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters:
No specific occupational exposure limit (OEL) has been established for methyl salicylate under the Factories Act, 1948. Some international bodies have proposed a general guidance value in the range of 5–20 mg/m³ (TWA, 8h) for related ester vapours – typical value, refer to current specification sheet and consult an industrial hygienist for site-specific assessment.

8.2 Appropriate engineering controls:
Use local exhaust ventilation at points of vapour generation (bulk transfer, open processing, heating) to maintain airborne concentrations as low as reasonably practicable.

B. Respiratory protection:
Not normally required under good ventilation. For operations generating significant vapour, use an organic vapour cartridge respirator.

C. Specific protection for the hands:
Chemically resistant gloves (nitrile or similar) required, given the skin-irritant classification and dermal absorption potential.

D. Eye and face protection:
Chemical safety goggles required when handling, given the eye-irritant classification.

E. Bodily protection:
Standard chemical-resistant industrial work clothing/apron; avoid prolonged skin contact.

F. Additional emergency measures:

Eyewash station and emergency shower should be readily available in the work area.

Environmental exposure controls:

Avoid release to the environment. See subsection 7.1.D and Section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

Appearance	
Physical state at 20°C	Liquid
Appearance	Clear, colourless to pale yellow oily liquid
Color	Colourless to pale yellow
Odor	Characteristic strong wintergreen odour
Odour threshold	Very low (highly odorous); not established numerically
Volatility	
Boiling point at atmospheric pressure	220–224°C
Vapour pressure at 20°C	≈0.03 kPa (low volatility at room temperature)
Evaporation rate at 20°C	Slow (low volatility)
Product Description	
Molecular formula	C8H8O3
Molecular weight	152.15 g/mol
Density / Relative density at 20°C	≈1.18 g/cm³
Concentration	≥99.0% (typical, synthetic grade)
pH	Not relevant (water-insoluble liquid)
Vapour density (air = 1)	≈5.3
Partition coefficient n-octanol/water	log Pow ≈ 2.55
Solubility in water at 20°C	Slightly soluble (≈0.7 g/L); miscible with ethanol, ether, chloroform and most organic solvents
Decomposition temperature	Not established (distills unchanged under normal conditions)
Melting point/freezing point	-8.6°C
Flammability	
Flash Point	≈101°C (closed cup)
Flammability (solid, gas)	Combustible liquid
Autoignition temperature	454°C
Lower / Upper flammability limit	Not established
Particle Characteristics	
Median particle size	Non-applicable (liquid)

Values are typical for commercial synthetic methyl salicylate and may vary within specification tolerances.

9.2 Other information:

Explosive properties	Not explosive
Oxidising properties	Not oxidising
Corrosive to metals	Not corrosive
Heat of combustion	Not established
Surface tension at 20°C	Not established
Refraction index (20°C)	≈1.536

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:

Stable under normal conditions of use. May react with strong oxidising agents and strong bases (ester hydrolysis/saponification), generating heat.

10.2 Chemical stability:

Chemically stable under recommended storage, handling and use conditions.

10.3 Possibility of hazardous reactions:

No hazardous reactions expected under normal conditions of use.

10.4 Conditions to avoid:

Shock/Friction	Contact with Air	Increase in Temperature	Sunlight	Humidity
Not applicable	Not applicable	Avoid heat sources/open flame	Avoid prolonged direct exposure (may discolour)	No specific precaution

10.5 Incompatible materials:

Strong Oxidizers	Strong Bases	Strong Acids
Avoid contact	Avoid contact (ester hydrolysis/saponification)	Avoid contact

10.6 Hazardous decomposition products:

Thermal decomposition/combustion at high temperature may release carbon monoxide and carbon dioxide.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

Methyl salicylate has a well-documented oral-toxicity profile and is classified Acute Tox. 4 (H302) under GHS. It is readily absorbed through the skin and gastrointestinal tract; metabolism yields salicylic acid, which is responsible for both its pharmacological (counter-irritant) action and its toxic effects at excessive doses.

A. Ingestion (acute effect):

Harmful if swallowed (H302). Ingestion of concentrated product, even in relatively small quantities, can cause salicylate toxicity (nausea, vomiting, hyperventilation, metabolic acidosis, tinnitus, CNS effects) and can be

especially dangerous in children.

B. Inhalation (acute effect):
Vapour may cause mild irritation of the respiratory tract. Not classified as an inhalation hazard under standard conditions of use.

C. Contact with skin and eyes (acute effect):
Causes skin irritation (H315) and serious eye irritation (H319). Readily absorbed through intact skin; extensive or occlusive dermal exposure may contribute to systemic salicylate absorption.

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

E. Sensitizing effects:
Not classified as a respiratory sensitiser. Occasional skin sensitisation has been reported in the literature with repeated/prolonged dermal exposure; classification criteria for skin sensitisation are not met based on the overall weight of available data.

F. Specific target organ toxicity (STOT) – single exposure:
Not formally classified; however, large acute exposures (ingestion or extensive dermal absorption) can produce systemic salicylate-toxicity effects as noted in A and C above.

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.

Product-specific toxicological information:

Identification	Acute Toxicity	Genus
Methyl Salicylate CAS: 119-36-8	LD50 oral: 887 mg/kg (ATEoral basis for Acute Tox. 4 classification)	Rat
	LD50 dermal: >5,000 mg/kg	Rabbit

SECTION 12: ECOLOGICAL INFORMATION

Harmful to aquatic life with long lasting effects.

12.1 Toxicity:

Acute Toxicity	Species	Genus
LC50: ≈3.3–13 mg/L (96h) – typical value, refer to current specification sheet	Non-applicable	Fish
EC50: ≈5–15 mg/L (48h) – typical value, refer to current specification sheet	Non-applicable	Crustacean (Daphnia)

12.2 Persistence and degradability:
Expected to be inherently biodegradable; ester hydrolyses under environmental conditions to salicylic acid and methanol.

12.3 Bioaccumulative potential:
Moderate potential for bioaccumulation based on log Pow (≈2.55); not expected to be significant given rapid hydrolysis/metabolism.

12.4 Mobility in soil:

Koc	Henry	Dry Soil	Moist Soil
Moderate	Low-moderate	Moderate mobility	Moderate mobility

12.5 Results of PBT and vPvB assessment:
Does not meet PBT/vPvB criteria.

12.6 Other adverse effects:
Classified Aquatic Chronic 3 (H412); avoid release to water courses.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Disposal methods:
Dispose of in accordance with local, state and national regulations applicable to chemical waste. Do not discharge into drains or waterways given its aquatic toxicity classification. Use an authorised waste disposal contractor for bulk quantities. Empty packaging completely before disposal/recycling.
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 assigned a UN number for transport (not regulated as dangerous goods under ADR in typical packaged quantities)
14.2 UN proper shipping name	Non-applicable
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	N/A
14.5 Environmental hazard	Yes – classified Aquatic Chronic 3 (H412); environmentally hazardous marking may be required for bulk/marine transport per IMDG
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 for typical packaged commercial quantities

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

14.1 UN number	Not assigned a UN number for typical packaged quantities
14.2 UN proper shipping name	Non-applicable
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	N/A
14.5 Marine pollutant	No (below IMDG marine pollutant threshold at standard commercial purity; re-assess for bulk shipments)
14.6 Special precautions for user	None beyond standard good practice
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant for typical packaged commercial quantities

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

14.1 UN number	Not assigned a UN number for typical packaged quantities
14.2 UN proper shipping name	Non-applicable
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	N/A
14.5 Environmental hazard	No special IATA marking required for typical packaged quantities

14.6 Special precautions for user	None beyond standard good practice
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:

Permitted as a flavouring agent (strictly regulated concentration) under the Food Safety and Standards Authority of India (FSSAI) regulations, and as a pharmaceutical active/excipient per applicable Indian Pharmacopoeia (IP) monographs for topical counter-irritant preparations, subject to approved use levels. It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of local circumstances.

Other legislation:

- Food Safety and Standards Act, 2006 and associated Regulations (India)
- The Factories Act, 1948, as amended
- Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 – applicability to be assessed based on quantity stored and local threshold quantities

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:

- H302: Harmful if swallowed.
- H315: Causes skin irritation.
- H319: Causes serious eye irritation.
- H412: Harmful to aquatic life with long lasting effects.

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3.

Advice related to training:

Staff handling this product should receive training on safe handling, the importance of avoiding ingestion, and emergency first-aid procedures, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Principal bibliographical sources:

Published GHS classification databases and standard commercial safety data references for methyl salicylate (CAS 119-36-8).

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 | ATE: Acute Toxicity Estimate | LD50: Lethal Dose 50 | LC50: Lethal Concentration 50 | EC50: Effective Concentration 50 | Log-POW: Octanol-water partition coefficient | Koc: Partition coefficient of organic carbon | IARC: International Agency for Research on Cancer | IP: Indian Pharmacopoeia | FSSAI: Food Safety and Standards Authority of India

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