

NONYLPHENOL (TECHNICAL GRADE, MIXED ISOMERS)

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SECTION 1: IDENTIFICATION

1.1 GHS Product identifier:

NONYLPHENOL (TECHNICAL GRADE, MIXED ISOMERS)
4-Nonylphenol; Isononylphenol
CAS: 25154-52-3

Other means of identification:

Not relevant

1.2 Recommended use of the chemical and restrictions on use:

Relevant uses: Chemical intermediate for nonylphenol ethoxylates (surfactants), antioxidants, phenolic resins and lubricant additives. For industrial user only.
Uses advised against: Not for use in cosmetics, personal care or consumer products within jurisdictions restricting nonylphenol/nonylphenol ethoxylates (e.g. EU). All uses not specified in this section or in section 7.3.

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 (oral)	Acute oral toxicity, Category 4, H302
Skin Corr./Irrit. 2	Skin irritation/corrosion, Category 2, H315
Eye Dam. 1	Serious eye damage, Category 1, H318
Skin Sens. 1	Skin sensitization, Category 1, H317
Repr. 2	Reproductive toxicity, Category 2, H361
Aquatic Acute 1	Hazardous to the aquatic environment, acute hazard, Category 1, H400
Aquatic Chronic 1	Hazardous to the aquatic environment, chronic hazard, Category 1, H410

Nonylphenol is listed as a Substance of Very High Concern (SVHC) under EU REACH on grounds of endocrine-disrupting properties for the environment and for human health (Article 57(f)); this notation is carried for informational purposes though it is not a formal GHS hazard class.

2.2 GHS label elements, including precautionary statements:

GHS: Danger

Hazard statements:

H302: Harmful if swallowed.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H318: Causes serious eye damage.
H361: Suspected of damaging fertility or the unborn child.
H400: Very toxic to aquatic life.
H410: Very toxic to aquatic life with long lasting effects.

Precautionary statements:

P201: Obtain special instructions before use.
P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
P264: Wash hands and exposed skin thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P272: Contaminated work clothing should not be allowed out of the workplace.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face 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.
P310: Immediately call a POISON CENTER/doctor (for eye damage).
P333+P313: If skin irritation or rash occurs: Get medical advice/attention.
P391: Collect spillage.
P501: Dispose of the contents/containers in accordance with regulations on hazardous waste or packaging and packaging waste, respectively.

2.3 Other hazards which do not result in classification:

Identified under EU REACH as a Substance of Very High Concern due to endocrine-disrupting properties. Not a PBT substance per all assessments, but shows persistence and bioaccumulation concerns for certain breakdown products (nonylphenol is itself a degradation product of nonylphenol ethoxylate surfactants).

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances:

Chemical description: Nonylphenol, technical grade (mixture of branched-chain isomers)
In accordance with Annex 4.3.3 of the GHS, the product contains:

Identification	Chemical Name / Classification	Concentration
CAS: 25154-52-3	Nonylphenol — Acute Tox. 4: H302; Skin Irrit. 2: H315; Skin Sens. 1: H317; Eye Dam. 1: H318; Repr. 2: H361; Aquatic Acute 1: H400; Aquatic Chronic 1: H410 — Danger	≥ 95% (typical commercial/technical grade, mixed isomers)

3.2 Mixtures:

Technical grade is a mixture of branched nonylphenol isomers; exact isomer distribution is grade-specific – available on request.

SECTION 4: FIRST AID MEASURES

4.1 Description of necessary first-aid measures:

Request medical assistance immediately, showing the SDS of this product.

By inhalation:

Remove the person affected from the area of exposure to fresh air and keep at rest. Seek medical attention if discomfort persists.

By skin contact:

Remove contaminated clothing immediately. Wash skin thoroughly with plenty of water and soap for at least 15 minutes. Seek medical attention – may cause irritation and allergic skin reaction. Launder contaminated clothing before reuse.

By eye contact:

Rinse eyes immediately and thoroughly with lukewarm water for at least 20 minutes, lifting eyelids occasionally. Remove contact lenses if present and easy to do. Seek immediate medical attention – causes serious eye damage.

By ingestion/aspiration:

Do not induce vomiting. Rinse out the mouth. Seek immediate medical attention. Keep the person at rest.

4.2 Most important symptoms/effects, acute and delayed:

Skin and eye irritation/damage, possible allergic skin reaction (sensitization) on repeated contact. Potential reproductive/developmental effects with significant or repeated exposure. See sections 2 and 11.

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

Ophthalmological examination is recommended following eye contact due to risk of serious eye damage. No specific antidote; treat symptomatically.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable extinguishing media:

Suitable: Dry chemical powder, carbon dioxide, foam, water spray/fog

Unsuitable: High-pressure water jet (may spread burning liquid)

5.2 Specific hazards arising from the chemical:

Combustible liquid/semi-solid. Combustion may release irritant and toxic fumes including carbon monoxide, carbon dioxide and phenolic decomposition products.

5.3 Special protective actions for fire-fighters:

Evacuate non-essential personnel. Wear self-contained breathing apparatus and full protective clothing.

Additional provisions:

Cool closed containers exposed to fire with water spray. Contain fire-fighting water run-off to prevent environmental release – very toxic to aquatic life.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

Avoid all skin and eye contact. Use PPE described in section 8. Ensure adequate ventilation.

For emergency responders:

Wear appropriate protective equipment as per section 8, including chemical-resistant clothing.

6.2 Environmental precautions:

Avoid at all cost any release into drains, watercourses or soil – very toxic to aquatic life with long lasting effects. Contain spillage immediately. Notify the relevant authority in case of significant environmental release.

6.3 Methods and materials for containment and cleaning up:

Contain spillage with inert absorbent material. Collect into a suitable, labelled container for disposal. Do not flush to drains. Clean the contaminated surface thoroughly.

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 all contact with skin and eyes. Use only in well-ventilated areas. Keep away from heat and open flame.

B. Technical recommendations for the prevention of fires and explosions:

Use standard combustible liquid precautions; bond and ground equipment during bulk transfer operations.

C. Technical recommendations on general occupational hygiene:

Do not eat, drink or smoke while handling. Wash hands and exposed skin thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.

D. Technical recommendations to prevent environmental risks:

Prevent release to drains and watercourses. Provide bunding for bulk storage. Follow the protective measures given in section 8.

7.2 Conditions for safe storage, including any incompatibilities:

A. Specific storage requirements:

Minimum Temp.	10°C (above pour point)
Maximum Temp.	35°C
Maximum time	12 Months (unopened, in original packaging)

B. General conditions for storage:

Store in a cool, dry, well-ventilated place away from heat, open flame and strong oxidizers, in tightly closed containers. Provide a containment bund for bulk storage.

7.3 Specific end use(s):

Except for the instructions already specified, it is not necessary to provide any special recommendation regarding the uses of this product. Note regulatory restrictions on downstream use noted in section 1.2 and section 15.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters:

No specific occupational exposure limit is established for nonylphenol under Indian regulations.

Identification	Occupational Exposure Limit Type	Value
Nonylphenol CAS: 25154-52-3	No established OEL	Typical value – refer to current specification sheet

8.2 Appropriate engineering controls:

Use local exhaust ventilation and closed-system handling where possible to minimize skin and eye contact opportunities.

- B. Respiratory protection:**
Not normally required with adequate ventilation under ambient conditions; use an organic vapour respirator if heated or if mist is generated.
- C. Specific protection for the hands:**
Chemical-resistant gloves (e.g. nitrile, neoprene, or specialty laminate per manufacturer's permeation data). Replace at any sign of damage.
- D. Eye and face protection:**
Chemical safety goggles and face shield – mandatory given serious eye damage classification.
- E. Bodily protection:**
Chemical-resistant protective clothing covering all exposed skin. Chemical-resistant safety footwear.
- F. Additional emergency measures:**
Emergency shower and eyewash stations must be readily available in the work area.
- Environmental exposure controls:**
Avoid environmental spillage of both the product and its container. 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) or semi-solid, grade-dependent
Appearance	Clear to pale yellow viscous liquid
Color	Colorless to pale yellow
Odor	Characteristic phenolic odour
Odour threshold	Not established
Volatility	
Boiling point at atmospheric pressure	~290–320°C (typical)
Vapour pressure at 20°C	<0.01 mm Hg (negligible)
Evaporation rate at 20°C	Very low
Product Description	
Density / Relative density at 20°C	~0.95–0.96 g/cm³
Dynamic / Kinematic viscosity at 20°C	Typical value – refer to current specification sheet
Concentration	≥95% (typical commercial/technical grade)
pH	Non-applicable (immiscible with water)
Vapour density	Not relevant (negligible vapour pressure)
Partition coefficient n-octanol/water (log Pow)	~4.2–4.5
Solubility in water at 20°C	~5–7 mg/L (practically insoluble); soluble in most organic solvents
Decomposition temperature	Typical value – refer to current specification sheet
Melting point/freezing point	~ -10 to +5°C (varies by isomer mixture)
Flammability	
Flash Point	~135–160°C (closed cup, typical)
Flammability (solid, gas)	Non-applicable (liquid); combustible
Autoignition temperature	Typical value – refer to current specification sheet
Lower / Upper flammability limit	Not established
Particle Characteristics	
Median equivalent diameter	Non-applicable (liquid)

* Values are typical for the commercial grade; refer to current specification sheet for batch-specific data (isomer distribution affects several properties).

9.2 Other information:

Explosive properties	Not relevant
Oxidising properties	Not relevant – not an oxidiser
Corrosive to metals	Not relevant
Heat of combustion	Typical value – refer to current specification sheet
Surface tension at 20°C	Typical value – refer to current specification sheet
Refraction index	~1.50 (typical)

SECTION 10: STABILITY AND REACTIVITY

- 10.1 Reactivity:**
Stable under normal conditions of use. Reacts with strong oxidizing agents; may react with strong acids and bases.
- 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, violent reactions are not expected, though contact with strong oxidizers should be avoided.
- 10.4 Conditions to avoid:**

Shock/Friction	Contact with Air	Increase in Temperature	Sunlight	Humidity
Not applicable	May oxidize/discolour slowly on prolonged exposure	Keep away from heat/ignition sources	Avoid prolonged direct exposure	No special measures

10.5 Incompatible materials:

Strong Oxidizers	Strong Acids/Bases	Ignition Sources
Avoid contact	Avoid contact	Keep away

10.6 Hazardous decomposition products:

Thermal decomposition/combustion may release carbon monoxide, carbon dioxide and phenolic/irritant fumes.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

Per well-established published data for this CAS number, nonylphenol presents the following toxicological profile:

A. Ingestion (acute effect):

Harmful if swallowed. May cause gastrointestinal irritation, nausea and vomiting.

B. Inhalation (acute effect):

Low volatility limits inhalation exposure under normal conditions; mist/vapour at elevated temperature may cause respiratory irritation.

C. Contact with skin and eyes (acute effect):

Causes skin irritation and serious eye damage. May cause an allergic skin reaction on repeated or prolonged contact (skin sensitizer).

D. CMR effects (carcinogenicity, mutagenicity, reproductive toxicity):

Suspected of damaging fertility or the unborn child (Repr. 2, H361) based on animal studies and endocrine-disrupting activity (estrogenic effects). Not classified for carcinogenicity or germ cell mutagenicity based on available data. Identified as an endocrine disruptor under the EU REACH SVHC listing.

E. Sensitizing effects:

May cause an allergic skin reaction (Skin Sens. 1, H317) 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 for formal STOT RE are not met under standard GHS criteria based on available data, though endocrine and reproductive effects are noted above.

H. Aspiration hazard:

Viscous liquid; low aspiration risk expected, but not formally assessed.

Product-specific toxicological information:

Identification	Acute Toxicity	Genus
Nonylphenol CAS: 25154-52-3	LD50 oral: ~1300–1600 mg/kg	Rat
	LD50 dermal: ~2000 mg/kg	Rabbit

SECTION 12: ECOLOGICAL INFORMATION

Very toxic to aquatic life with long lasting effects. Endocrine-disrupting properties identified for the environment.

12.1 Toxicity:

Acute Toxicity	Species	Genus
LC50: 0.0062–0.135 mg/L (96h)	Non-applicable	Fish
EC50: ~0.09–0.19 mg/L (48h)	Non-applicable	Crustacean (Daphnia magna)

12.2 Persistence and degradability:

Not readily biodegradable under standard aerobic test conditions; nonylphenol is also generated as a persistent degradation product of nonylphenol ethoxylate surfactants in the environment.

12.3 Bioaccumulative potential:

High bioaccumulation potential indicated by log Pow (~4.2–4.5); measurable bioconcentration reported in aquatic organisms.

12.4 Mobility in soil:

Koc	Henry	Dry Soil	Moist Soil
High (strongly adsorbs to soil/sediment)	Low	Low mobility expected	Low mobility expected

12.5 Results of PBT and vPvB assessment:

Identified as a Substance of Very High Concern (SVHC) under EU REACH on the basis of endocrine-disrupting properties for both the environment and human health; not formally classified as PBT/vPvB under all assessment frameworks, but meets criteria of concern in several regulatory reviews.

12.6 Other adverse effects:

Endocrine-disrupting (estrogenic) activity documented in aquatic organisms at low environmental concentrations.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Disposal methods:

Dispose of in accordance with local, state and national hazardous waste regulations. Incineration at a licensed hazardous waste facility is the preferred disposal route. Do not discharge to drains or watercourses under any circumstances given high aquatic toxicity and endocrine-disrupting concern. For packaging: avoid treatments as far as possible – use dedicated containers.

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	UN3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Nonylphenol)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
14.5 Environmental hazard	Yes
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	UN3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Nonylphenol)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
14.5 Marine pollutant	Yes
14.6 Special precautions for user	EmS Codes: F-A, S-F Limited quantities: 5 L Segregation group: Not relevant
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	UN3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Nonylphenol)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
14.5 Environmental hazard	Yes
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

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, in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product. Nonylphenol and nonylphenol ethoxylates are subject to use restrictions in several jurisdictions (e.g. EU REACH Annex XVII, EU SVHC candidate list) on environmental and endocrine-disruption grounds; buyers should verify end-use compliance in their own regulatory jurisdiction.

Other legislation:

- Manufacture, Storage and Import of Hazardous Chemicals Rules 1989
- The Factories Act, 1948 (Act No. 63 of 1948), as amended by the Factories (Amendment) Act, 1987 (Act 20 of 1987)
- The Chemical Accidents (Emergency Planning, Preparedness, and Response) Rules, 1996
- Public Liability Insurance Act, 1991
- EU REACH Regulation – Substance of Very High Concern (SVHC) candidate list (where applicable to export/EU-bound shipments)

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.
- H317: May cause an allergic skin reaction.
- H318: Causes serious eye damage.
- H361: Suspected of damaging fertility or the unborn child.
- H400: Very toxic to aquatic life.
- H410: Very toxic 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:

Comprehensive training is strongly recommended for staff handling this product, given its corrosive/irritant, sensitizing and environmental hazard profile, to ensure full comprehension and interpretation of this safety data sheet and the label.

Principal bibliographical sources:

- Published GHS classification data, EU REACH SVHC listing information and standard chemical reference sources for CAS 25154-52-3.

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 | BCF: Bioconcentration factor | LD50: Lethal Dose 50 | LC50: Lethal Concentration 50 | EC50: Effective Concentration 50 | Log-POW: Octanol-water partition coefficient | Koc: Partition coefficient of organic carbon | SVHC: Substance of Very High Concern | REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals

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