

Material Safety Data for: Surfactant NP-9

1. PRODUCT IDENTIFICATION

Name nonylphenol ethoxylate NP-9
Synonyms poly(oxy-1,2-ethanediyl)-, alpha-(4-nonylphenyl)-omega-hydroxy-, branched
CAS# 127087-87-0
Product Uses surfactant – detergent formulation

2. INGREDIENTS

	CAS #	%	TWAEV / TLV mg/m ³	LD ₅₀ ORAL	(mg/kg) SKIN	LC ₅₀ mg/m ³ INHALATION
Nonylphenol Ethoxylate – NP-9	127087-87-0	97-99%	not listed	960	2000	1150
Dinonylphenyl Polyoxyethylene	9014-93-1	1-3%	not listed	not known	not known	not known
Polyethylene Glycol	25322-68-3	<3%	10	17,000	not known	not known

3. (a) HAZARDS SUMMARY

Hazards, Quick Guide: irritating to skin and eyes, suspected carcinogen, suspected reproductive toxin

Canada – WHMIS

Key:

D 2B

B 2 – Flash Point <38°C, **B 3** – Flash Point >38°C & <93°C

D 1 – Immediately Toxic, **D 2** – Chronic Toxicity

C – Oxidising Substance, **E** – Corrosive

U.S.A. – HMIS

Key:

Health – 2, Fire – 1, Reactivity – 0

0=minimal, 1=slight, 2=moderate, 3=serious, 4=severe

3. (b) HAZARDS – TOXICITY

Effects, Acute Exposure

Skin Contact brief contact – little to no effect; some irritation with prolonged contact
Skin Absorption slight; no toxic effects likely by this route
Eye Contact severely irritating after delay; chemical burns on prolonged contact (*unlikely due to irritancy*)
Inhalation mist may irritate with chest pain and discomfort – viscous liquid, misting unlikely
Ingestion may cause abdominal discomfort, nausea, diarrhoea – not a route of industrial exposure

Effects, Chronic Exposure

General prolonged exposure may cause dermatitis & chemical burns to the eye; *burns heal within a week; no adverse systemic effects reported following industrial exposure; prolonged feeding of NP-9 (1000mg/kg/day) caused enlarged livers & reduced body weight in rats*
Sensitising not a sensitiser in humans or animals
Carcinogen/Tumorigen not considered a tumorigen or a carcinogen in humans or animals
Reproductive Effect no known effect in humans; fetotoxic in rodents only at doses causing maternal symptoms
Mutagen no known effect on humans or animals
Synergistic With not known
LD₅₀ (oral) 960-3980mg/kg (rat)
LD₅₀ (skin) 2000-2990mg/kg (rabbit)
LC₅₀ (inhalation) 1150mg/m³ (rat)

Please ensure that this MSDS is given to, and explained to people using this product.

4. FIRST AID

- SKIN: Wash with plenty of water. Remove contaminated clothing and do not reuse until thoroughly laundered.
- EYES: Wash eyes with plenty of water, holding eyelids open. Seek medical assistance promptly if there is irritation.
- INHALATION: Remove from contaminated area promptly. **CAUTION: Rescuer must not endanger himself!** If breathing stops, administer artificial respiration and seek medical aid promptly.
- INGESTION: Give plenty of water to dilute product. Do not induce vomiting (NOTE below). Keep victim quiet. If vomiting occurs, lower victim's head below hips to prevent inhalation of vomited material. Seek medical help promptly.

Inadvertent inhalation of vomited material may seriously damage the lungs. The danger of this is greater than the risk of poisoning through absorption of this relatively low-toxicity substance. The stomach should only be emptied under medical supervision, and after the installation of an airway to protect the lungs.

5. PHYSICAL PROPERTIES

Odour & Appearance	murky, viscous, colourless, nearly odourless liquid
Odour Threshold	not known
Vapour Pressure	below 0.01mmHg / 0.0013kPa (20°C / 68°F)
Evaporation Rate (<i>Butyl Acetate</i> = 1)	not known – not volatile
Vapour Density (air = 1)	~14
Boiling Range	over 250°C / 482°F – <i>decomposes without boiling</i>
Pour Point	4°C / 39°F
Specific Gravity	1.055 (20/20°C)
Water Solubility	complete
Also soluble in	chlorinated solvents, polar solvents
Viscosity	243centipoise (25°C / 77°F)
pH	6
Molecular Weight	396grams per mole (average)

6. FLAMMABILITY & FIRE FIGHTING

Flash Point	247°C / 477°F (closed cup)
Autoignition Temperature	not known
Flammable Limits	not known
Combustion Products	carbon monoxide, nitrogen oxides, smoke, part oxidised hydrocarbon fragments including formldehyde
Fire Fighting Precautions	foam, dry chemical, water fog or spray; fire fighters must wear SCBA
Static Charge Accumulation	cannot accumulate a static charge on agitation or pumping

7. STABILITY / REACTIVITY

Dangerously Reactive With	strong oxidising agents, strong alkalies at higher temperature
Also Reactive With	strong acids and substances reacting with hydroxyl ions
Stability	stable; will not polymerize
Decomposes in Presence of	heat; slow decomposition above 50°C; rapid decomposition at 300°C
Decomposition Products	none apart from Hazardous Combustion Products
Sensitive to Mechanical Impact	no

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8. PROTECTIVE EQUIPMENT / EXPOSURE CONTROL

ACGIH TLV	not listed – recommended (WEEL) 10mg/m ³
OSHA PEL	not listed – recommended (WEEL) 10mg/m ³
Ventilation	no special ventilation required
Hands	butyl or “Viton” gloves recommended – <i>other types may also protect; consult supplier to confirm suitability</i>
Eyes	safety glasses with side shields – <i>always protect the eyes</i>
Clothing	no special protective clothing required

9. HANDLING & STORAGE

Store in a cool, dry environment, away from heat and oxidising agents. Always ensure that containers, whether empty or full, or part full, are tightly sealed unless in use.

Avoid breathing product mist. Use with adequate ventilation if mist is created in processing.

Never cut, drill, weld or grind on or near this container. Avoid prolonged contact with skin and wash work clothes frequently. An eye bath and safety shower must be available near the workplace.

10. SPILL PROCEDURES

Leak Precaution	dyke to control spillage and prevent environmental contamination
Handling Spill	ventilate contaminated area; recover free liquid with suitable pumps; absorb residue on an inert sorbent, sweep, shovel, & store in closed containers for recycling or disposal

11. DISPOSAL

Waste Disposal	do not flush to sewer , recycle if possible, may be incinerated in approved facility after mixing with a flammable waste; biological destruction in a waste treatment facility may be acceptable if the facility has a very low release of part-degraded products (<i>see Part 12, below</i>)
Containers	Drums should be reused. Recondition and pressure test by a licensed reconditioner prior to re-use. Pails must be vented and thoroughly dried prior to crushing and recycling. IBCs (intermediate bulk containers): polyethylene bottle must be pressure tested & recertified at 30 months. Replace at 60 months (5yrs). Steel containers must be inspected, pressure tested & recertified every 5 years. <i>Never cut, drill, weld or grind on or near this container, even if empty</i>

12. ENVIRONMENTAL INFORMATION

Bioaccumulation	not a bioaccumulator, but biodegradation products (unethoxylated nonylphenol) bioaccumulate and mimic hormones, causing sexual dysfunction in shore birds, amphibians and fish <u>at very low doses</u>
Biodegradation	this product degrades readily but slowly in unacclimated waters – rapidly in acclimated waters – in the presence of oxygen; 42% in 20 days; <u>biodegradation is incomplete, leaving nonylphenol mono- and diethoxylate which have biological activity</u>
Abiotic Degradation	not known – <i>aromatic ring should be susceptible to photolysis</i>
Mobility in soil, water	this product is water soluble and will move readily in soil and water
Environmental Toxicity	<i>Several studies show that nonylphenol ethoxylates biodegrade completely (to CO₂), others show this is not possible and that some always remains. Given the huge volume used, this small amount (estimated as 0.4% of initial nonylphenol ethoxylate) may be sufficient to cause the reproductive disruption observed in some fish and shore birds. European authorities have nearly banned the use of nonylphenol ethoxylates since January 2005.</i>
Ecotoxicity	
LC ₅₀ (Fish, 96hr)	3.8-7.7mg/l (96hr, pimephales promelas)
LC ₅₀ (Crustacea, 48hr)	9.3-21.4mg/l (daphnia magna)
EC ₅₀ (microorganisms)	>1000mg/litre (various bacteria)

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13. TRANSPORT REGULATIONS

<i>Canada TDG</i>	PIN	not regulated for transport
	Shipping Name	not regulated for transport
	Class	not regulated for transport
	Packing Group	not regulated for transport
<i>U.S.A. 49 CFR</i>	PIN	not regulated for transport
	Shipping Name	not regulated for transport
	Class	not regulated for transport
	Packing Group	not regulated for transport
Marine Pollutant		not a marine pollutant

14. EMERGENCY INFORMATION

<i>Canada</i>	Call CANUTEC (collect)	(613) 996-6666
<i>U.S.A.</i>	Call CHEMTREC	(800) 424-9300

15. REGULATIONS

Canada DSL	on inventory
U.S.A. TSCA	on inventory
Europe EINECS	on inventory (EC# 500-024-6)

16. PREPARATION INFORMATION

Prepared for Megaloid Laboratories by Peter Bursztyn, (705) 734-1577 File Name:NP-9
 With data from RTECS, Haz. Substance Data Base, Cheminfo (CCOHS), IUCLID Datasheets (European Chem. Substance Info. System), & others, as available
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