
MATERIAL SAFETY DATA SHEET

Date Updated: 07/07/2025

< 1 > Product and Company Information

Product Name RIPA Buffer
Code Number F015A

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Evaluated as a single compound below (Poly(oxyethylene) nonylphenyl ether)

<2 > Hazards Identification

Classification according to Regulation (EC) No 1272/2008
Skin, corrosion/irritation (Category 2), H315
Serious eye damage / eye irritation (Category 2A), H319
Reproductive toxicity (Category 2), H361
Hazardous to the aquatic environment: Acute (Category 1), H400
Hazardous to the aquatic environment: Long term (Category 2), H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

Symbol:

Signal word: Warning

Hazard statement(s)
H315: Causes skin irritation
H319: Causes serious eye irritation
H361: Suspected of damaging fertility or the unborn child
H400: Very toxic to aquatic life
H411: Toxic to aquatic life with long-lasting effects

Precautionary statement(s)
P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P302 + P352: IF ON SKIN: Wash with plenty of soap and 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.
P308 + P313: IF exposed or concerned: Get medical advice/attention.
P332 + P 313: IF SKIN irritation occurs: Get medical advice/attention.

P337 + P318: IF eye irritation persists: Get medical advice/attention.
P362 + P364: Take off contaminated clothing and wash it before reuse.
P391: Collect spillage.
P405: Store locked up.
P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental Hazard Statements: none

<3 > Composition/Information on Ingredients

Component: RIPA Buffer

Description of the product: Mixture of substances listed below with nonhazardous additions

Hazardous Ingredient(s)
Poly(oxyethylene) nonylphenyl ether CAS #:9002-93-1 Percent: 1%
Synonym: Nonylphenol polyethylene glycol ether

< 4 > First Aid Measures

Description of first aid measures
General advice: Consult a physician. Show this safety data sheet to the doctor in attendance.
If inhaled: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact: Wash off with soap and plenty of water. Consult a physician.
In case of eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
Most important symptoms and effects, both acute and delayed
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Indication of any immediate medical attention and special treatment needed
No data available

< 5 > Fire Fighting Measures

Extinguishing media
Suitable extinguishing media:
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Special hazards arising from the substance or mixture:
No data available
Advice for firefighters: Wear self-contained breathing apparatus for firefighting if necessary.
Further information: No data available

< 6 > Accidental Release Measures

Personal precautions, protective equipment and emergency procedures:
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.
Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
Methods and materials for containment and cleaning up:
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.
Reference to other sections: For disposal see section 13.

< 7 > Handling and Storage

Precautions for safe handling: Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.
Conditions for safe storage, including any incompatibilities:
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage temperature:
2 - 8 °C
Specific end use(s): No data available

< 8 > Exposure Controls / PPE

Engineering controls
Use only in a chemical fume hood. Safety shower and eye bath.
Personal Protective Equipment

Respiratory:	Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.
Hand:	Compatible chemical-resistant gloves.
Eye:	Chemical safety goggles.

General Hygiene Measures
Wash contaminated clothing before reuse. Wash thoroughly after handling.

< 9 > Physical/Chemical Properties (Poly(oxyethylene) nonylphenyl ether)

Appearance Form:	liquid, clear, viscous Colour: colourless
Odor:	N/A
Odor Threshold:	No data available
pH:	N/A
Melting point/freezing point:	- 20 °C (freezing point)
Initial boiling point and boiling range:	N/A
Flash point:	282 °C (NPE9.5)
Evaporation rate:	N/A
Flammability (solid, gas):	N/A
Upper/lower flammability or explosive limits:	N/A
Vapour pressure:	N/A
Vapour density:	N/A
Relative density:	1.06 (NPE9.5, 20°C)
Water solubility:	soluble
Partition coefficient (n-octanol/water):	N/A
Auto-ignition temperature:	N/A
Decomposition temperature:	N/A
Viscosity:	N/A
Explosive properties:	N/A

N/A = not available

< 10 > Stability and Reactivity

Stability
Stable: Stable under normal conditions
Materials to Avoid: Oxidizing agents, Acids, Bases.
Hazardous Decomposition Products: Nature of decomposition products not known.
Hazardous Polymerization: Will not occur

< 11 > Toxicological Information

Information on toxicological effects
Acute toxicity (oral): Theoretically, there are more than 100 types of isomers of this substance due to the differences in branching and substitution positions of nonyl groups. In this classification, the added molar number of ethylene oxide (EO) was specified when there is a description

in the information source.

Classification not possible due to lack of data.
There is a marked difference in the LD50 value of this substance since the chain length of this substance varies depending on the added molar number of EO.

The LD50 values of 1,300 mg/kg (EO 10), 1,800 mg/kg (EO 9), 1,980 mg/kg (EO 6), 2,500 mg/kg (EO 15), 4,300 mg/kg (EO 4) (Environmental Risk Assessment for Chemical Substances Vol.5 (Ministry of the Environment, 2006)) were reported, and each value corresponds to Category 4, Category 4, Category 4, "Not classified" (Category 5 in UN GHS classification), "Not classified" (Category 5 in UN GHS classification), respectively.

Besides, in Initial Risk Assessment Report (NITE, CERI, NEDO, 2005), which was used for the previous classification, it is described that LD50 values for rats are 1,300 - 7,400 mg/kg for EO 2 - 15 and 15,900 mg/kg for EO 20, and these correspond to Category 4 - "Not classified" and "Not classified," respectively. However, the classification was not possible because the category coule not be determined by these values alone.

Acute toxicity (Dermal):

Classification not possible due to lack of data.

There is a marked difference in the LD50 value of this substance since the chain length of this substance varies depending on the added molar number of EO.

Besides, it is described that the LD50 value of rabbits used in the previous classification was 1,800 to more than 10,000 mg/kg for EO 4-10 (Initial Risk Assessment Report (NITE, CERI, NEDO, 2005)), and these correspond to Category 4 - "Not classified." However, the classification is not possible because the category cannot be determined by these values alone.

Acute toxicity (Inhalation):

Classification not possible due to lack of data.

Skin corrosion/irritation:

In the multiple reports in which this substance was applied to volunteers, skin irritation caused by this substance was reported, therefore, it is stated that this substance shows skin primary irritation to humans (Hazard Assessment Report (CERI, NITE, 2007)). Besides, it was reported that in the skin irritation test using rabbits, application of EO 2-9 showed moderate to strong irritation and application of undiluted solution of EO 10 or more showed no irritation to mild irritation (Hazard Assessment Report (CERI, NITE, 2007)), but the details of the test such as application time were unknown. From the above, based on the description that it shows primary irritation in humans, it was classified in Category 2.

Serious eye damage/eye irritation:

In the eye irritation test using rabbits, it was reported that moderate to strong irritation was exhibited by applying undiluted solution of EO 2-15 (Hazard Assessment Report (CERI, NITE, 2007)). From the above, this substance was classified in Category 2A.

Respiratory/ Skin sensitization:

Respiratory sensitization: Classification not possible
Skin sensitization: In a maximization test using guinea pigs, it was reported that as a result of application of this substance (EO 6), it did not show sensitization (Hazard Assessment Report (CERI, NITE, 2007)). Also, there are multiple reports of patch tests on volunteers, and it is reported that they showed sensitization by applying 10% of this substance (EO 2) (Hazard Assessment Report (CERI, NITE, 2007)), a small number of people showed sensitization to this substance (EO 4 or 9) (Hazard Assessment Report (CERI, NITE, 2007), Environmental Risk Assessment for Chemical Substances Vol.5 (Ministry of the Environment, 2006)). It is written in Hazard Assessment Report (CERI, NITE, 2007) that based on these reports, the possibility of this substance with EO 10 or less showing skin sensitization is high. However, since the details of the test conditions and etc. are unknown in any of the reports, they were judged to be not sufficient to use for classification, and the substance was classified as "Classification not possible."

Germ cell mutagenicity:

The substance was classified as "Classification not possible," because it was not possible to classify a substance as "Not classified" according to the revised GHS classification guidance for the Japanese government. As for in vivo test, this substance which added molar number of EO is 9 - 12 were negative in a mouse dominant lethal test, micronucleus tests using mouse bone marrow cells (Hazard Assessment Report (CERI, NITE, 2007)), and as for in vitro test, it was negative in bacterial reverse mutation tests, a mammalian cell chromosomal aberration test (Hazard Assessment Report (CERI, NITE,

2007), Safety Test (Ministry of Economy, Trade and Industry (METI), Access on September 2016).

Carcinogenicity: In a 2-year carcinogenicity studies dosed in diet, in which NPE (EO 4) was administered to both male and female rats or both male and female dogs at up to 1,000 mg/kg/day, and in which NPE (EO 9) was administered to male rats at up to 140 mg/kg/day and to both male and female dogs at up to 88 mg/kg/day, no dose-dependent carcinogenesis was observed in either case (Hazard Assessment Report (CERI, NITE, 2005)). In a promoter test using N-methyl-N'-nitro-N-nitrosoguanidine (MNNG) as carcinogen initiator, after oral administration of drinking water containing 100mg/L of MNNG and 2,000 mg/L of NPE (the added molar number of EO is unknown) for 36 weeks to male rats, the incidence of tumor of glandular stomach was 12/15 (80%) for the group dosed with MNNG + NPE versus 8/13 (62%) for the control group dosed with only MNNG, and the incidence of small intestinal tumor was 7/15 (47%) for the group dosed with MNNG + NPE versus 1/13 (7.7%) for the control group dosed with only MNNG. From these results, it was concluded that NPE has tumor promoting effect (Hazard Assessment Report (CERI, NITE, 2005)). From the above, although it is considered that there is no carcinogenicity in NPE (EO 4) or NPE (EO 9), the possibility that this substance has a promoter action is pointed out, and thus, it was determined that the data were not enough to classify this substance as "Not classified." Therefore, the substance was classified as "Classification not possible" for this hazard class.

Reproductive toxicity: In the developmental toxicity test in which this substance with 9 added moles of EO (EO 9) was dosed by gavage to pregnant rats during organogenesis (gestation 6-15 day) or the entire gestation period (gestation 1-20 day), as for the administration during organogenesis, suppression of body weight gain and a decrease in the litter size were observed in the maternal animals and extra ribs were observed in the fetus at doses of 250 mg/kg/day or more. On the other hand, in the case of total gestation administration, dilatation of the pelvic cavity in the fetus of the group of 500 mg/kg/day was only observed (Hazard Assessment Report (CERI, NITE, 2007), Environmental Risk Assessment for Chemical Substances Vol.5 (Ministry of the Environment, 2006)). Therefore, since the litter size decreased at the dose with the expression of maternal toxicity, this substance was classified in Category 2 for this hazard class. Besides, it was reported that a single injection of EO 9 into uterine horns of pregnant rats on the first day of pregnancy and cesarean section at 8 - 12 days of pregnancy resulted in a decrease in pregnancy rate and average embryo number in the 0.5 mg/animal infusion group (Hazard Assessment Report (CERI, NITE, 2007), Environmental Risk Assessment for Chemical Substances Vol.5 (Ministry of the Environment, 2006)), and it was also reported that in the case of intravaginal administration of NPE 9 (50 mg/kg) to pregnant rats on 3rd or 7th day of gestation and caesarean section at 6-15 days of pregnancy or 8-15 days of pregnancy, a decrease in the number of implantation of embryos and an increase in the number of absorbed embryos were observed (Hazard Assessment Report (CERI, NITE) (2007)).

Specific target organ toxicity - Single exposure: Classification not possible due to lack of data.

Specific target organ toxicity - Repeated exposure: No data available for humans.

As for experimental animals, multiple tests using rats and dogs have been carried out on this substance with different added molar numbers of EO. The liver weight gain was seen within the range of up to Category 2 in many cases, and hepatocyte degeneration accompanied by lipid deposition, focal necrosis of hepatocytes and necrosis of renal tubules etc. have been observed at doses exceeding Category 2 (Hazard Assessment Report (CERI, NITE, 2007), Environmental Risk Assessment for Chemical Substances Vol.5 (Ministry of the Environment, 2006)). Besides, it was reported that in a 90-day repeated dose toxicity study of EO 4, 6, 15, 20 and 30 administered by diet, localized necrosis of cardiac muscle was observed for only EO 20 (Hazard Assessment Report (CERI, NITE, 2007), Environmental Risk Assessment for Chemical Substances Vol.5 (Ministry of the Environment, 2006)). As for this result, the similar finding was not observed in a similar study of dogs using EO 4 or EO 9, by the same author, a longer term study dosed by diet (2-year repeated dose toxicity study). Moreover, the similar result was not observed in the similar test using rats by the same author (a 90-day repeated dose toxicity test using rats given EO 4, 6, 15, 20, 30 by diet). Furthermore, the similar finding

was not observed in multiple tests using rats (tests using rats and EO 4, 9, 40) (Hazard Assessment Report (CERI, NITE, 2007), Environmental Risk Assessment for Chemical Substances Vol.5 (Ministry of the Environment, 2006)). From the above, because the effect on the cardiovascular system was observed only in the dogs given EO 20 and the same result was not seen in rats, it was considered that it would not be seen in this substance (EO ca. 10), and it was considered not appropriate to determine it as the target organ.
Therefore, because there is no sufficient effect for classification within a range of Category 2, and no information available on other routes, etc., the substance was classified as "Classification not possible."

Aspiration hazard: Classification not possible due to lack of data.

< 12 > Ecological Information

Hazardous to the aquatic environment

(Acute): From 48-hour LC50 (NPE9, branched) = 0.71-2.2 mg/L for crustacea (Mysidopsis bahia) (Environmental Risk Assessment for Chemical Substances vol. 7 (Ministry of the Environment, 2009)), it was classified in Category 1.

(Long-term): Because it is not rapidly degradable (a degradation rate by BOD: 0 % (Biodegradation and Bioconcentration Results of Existing Chemical Substances under the Chemical Substances Control Law, 1982)), and its 7-day NOEC (growth) (NPE9) = 1 mg/L for fish (Pimephales promelas) (Initial Risk Assessment (NITE, CERI, NEDO, 2005)), it was classified in Category 2.

Hazardous to the ozone layer: No data available.

< 13 > Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

< 14 > Transport Information

UN number

ADR/RID: - IMDG: - IATA-DGR: -

UN proper shipping name

ADR/RID: Not dangerous goods
IMDG: Not dangerous goods
IATA-DGR: Not dangerous goods

Transport hazard class(es)

ADR/RID: - IMDG: - IATA-DGR: -

Packaging group

ADR/RID: - IMDG: - IATA-DGR: -

Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA-DGR: no

Special precautions for user

No data available

< 15 > Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture
National regulatory information

Law concerning Pollutant Release and Transfer Register / PRTR Law:

Class I Designated Chemical Substances - Poly(oxyethylene) nonylphenyl ether

Chemical Substances Control Law:
Priority Assessment Chemical Substances (Registration No. 86, MITI No. 7-172), α-(nonylphenyl)-ε-hydroxypoly(oxyethylene)

Fire Service Law: Not applicable to dangerous materials.
Poisonous and Deleterious Substances Control Law: Not applicable

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< 16 > Reference

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1) Japan CHEmicals Collaborative Knowledge database
2) NITE Chemical Risk Information Platform)
3) THE MERCK INDEX 13TH EDITION
4) UNECE web page (GHS pictograms)

< 17 > Other Information

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