NOROX® MEKP-9 FRED

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1. Identification

1.1. Product identifier

Trade name NOROX® MEKP-9 FRED

1.2. Recommended use of the chemical and restrictions on use

1.3. Details of the supplier of the safety data sheet

Company United Initiators, Inc.

334 Phillips 311 Rd. Helena, AR 72342-9033

USA

Telephone 870-572-2935

Telefax 870-572-1416

E-mail address Cs-initiators.nafta@united-in.com

1.4. 24 HOUR EMERGENCY TELEPHONE NUMBERS:

CHEMTREC - US &

CANADA:

800-424-9300

CHEMTREC

INTERNATIONAL:

+1 703-527-3887 (collect calls accepted)

Product Regulatory

Services

: 800-231-2702

2. Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation 29CFR 1910.1200

Flammable liquids Category 4 H227 Organic peroxides Type D H242 Skin corrosion Category 1B H314 Serious eye damage Category 1 H318 Reproductive toxicity Category 2 H361 Acute aquatic toxicity Category 3 H402 Chronic aquatic toxicity Category 3 H412

2.2. Label elements

Statutory basis Classification according to Regulation 29CFR 1910.1200

Symbol(s)





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Signal word Danger

Hazard statement H227 - Combustible liquid.

H242 - Heating may cause a fire.

H314 - Causes severe skin burns and eye damage. H361 - Suspected of damaging fertility or the unborn child. H412 - Harmful to aquatic life with long lasting effects.

Precautionary statement:

Prevention

P201 - Obtain special instructions before use.

P202 - Do not handle until all safety precautions have been read and understood. P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P220 - Keep/Store away from clothing/ strong acids, bases, heavy metal salts and

other reducing substances /combustible materials.

P234 - Keep only in original container. P260 - Do not breathe dust or mist.

P264 - Wash skin thoroughly after handling. P273 - Avoid release to the environment.

P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection.

Precautionary statement:

Reaction

P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303 + P361 + P353 - IF ON SKIN (or hair): Remove/ Take off immediately all

contaminated clothing. Rinse skin with water/ shower.

P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position

comfortable for breathing.

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 or doctor/ physician.

P363 - Wash contaminated clothing before reuse.

P370 + P378 - In case of fire: Use water spray, alcohol-resistant foam, dry chemical

or carbon dioxide to extinguish.

P391 - Collect spillage.

Precautionary statement:

Storage

P403 + P235 - Store in a well-ventilated place. Keep cool.

P405 - Store locked up. P410 - Protect from sunlight.

P411 - Store at temperatures not exceeding 38°C (100°F).

P420 - Store away from other materials.

Precautionary statement:

Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant.

2.3. Other hazards

None known.

3. Composition/information on ingredients

Methyl ethyl ketone peroxide	32% - 35%		
CAS-No. 1338-23-4 Flammable liquids Organic peroxides Acute toxicity (Oral) Skin corrosion Serious eye damage		Category 4 Type D Category 4 Category 1B Category 1	
Dimethyl phthalate	35% - 60%		
CAS-No. 131-11-3			

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Acute Tox. 4 (Inhalation: vapours)	Category 4			
• Phlegmatizer 6% - 26%				
CAS-No. Proprietary Acute aquatic toxicity Chronic aquatic toxicity	Category 2 Category 2			
• Methyl ethyl ketone 0% - 2%				
CAS-No. 78-93-3 Flammable liquids Eye irritation Specific target organ toxicity - single exposure (Central nervous systems)	Category 2 Category 2A em) Category 3			
• Hydrogen peroxide <= 1%				
CAS-No. 7722-84-1 Oxidizing liquids Acute toxicity (Oral) Skin corrosion Serious eye damage Specific target organ toxicity - single exposure (Respiratory system) Chronic aquatic toxicity	Category 1 Category 4 Category 1A Category 1 Category 3 Category 3			
• N-methyl-2-pyrrolidone <= 1%				
CAS-No. 872-50-4 Flammable liquids Skin irritation Eye irritation Reproductive toxicity Specific target organ toxicity - single exposure (Respiratory system)	Category 4 Category 2 Category 2A Category 2 Category 3			

Other information

This material is classified as hazardous under OSHA regulations.

4. First aid measures

4.1. Description of first aid measures

Inhalation

If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If unconscious, evaluate the need for artificial respiration. Get immediate medical attention.

Skin contact

Immediately wash skin with soap and plenty of water. Remove contaminated clothing. Obtain medical attention immediately if symptoms occur. Wash clothing before reuse.

Eye contact

In case of contact, immediately flush eyes with plenty of water. Obtain medical attention if irritation develops.

Ingestion

If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms

None known

4.3. Indication of any immediate medical attention and special treatment needed None known.

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5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide., Dry Chemical combined with peroxide may reignite fire., Light water additives may be particularly effective at extinguishing peroxide fires.

Unsuitable extinguishing media: High volume water jet.

5.2. Special hazards arising from the substance or mixture

The heat of decomposition of the peroxides adds to the heat of the fire. Dry chemical fire extinguishing agent may catalyze the decomposition.

5.3. Advice for firefighters

If dry chemical is used to extinguish a peroxide fire, the extinguished area must be thoroughly wetted down with water to prevent reignition.

As in any fire, wear self-contained positive-pressure breathing apparatus and full protective gear.

Containers near the source of fire should be cooled with a water spray to prevent contents from reaching decomposition temperature.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas. Wear a self-contained breathing apparatus and appropriate personal protective equipment. (See Section 8 - Exposure Controls/Personal Protection.) Remove all sources of ignition. Ventilate the area.

6.2. Environmental precautions

Obey relevant local, state, provincial and federal laws and regulations. Do not contaminate any lakes, streams, ponds, groundwater or soil.

6.3. Methods and material for containment and cleaning up

Dike spill to prevent runoff from entering drains, sewers, streams, etc. Wet spilled material with water and absorb with an inert absorbent material such as perlite, vermiculite, or sand. Sweep up using non-sparking tools and place in a clean polyethylene drum or a polyethylene pail. DO NOT place into a steel container, lined or unlined, as decomposition may occur. Treat any contaminated cardboard packaging as hazardous waste. Wet container with additional water prior to sealing. Use absorbent/absorbent material to solidify liquids. Clean up promptly by sweeping or vacuum. Wear protective equipment, including eye protection, to avoid exposure (see Section 8 for specific handling precautions).

7. Handling and storage

7.1. Precautions for safe handling

Rotate stock using the oldest material first. Avoid contact with skin, eyes and clothing. Use PPE as specified in section 8. Keep containers closed to prevent contamination. Keep away from sources of heat, sparks, or flame. Do not add to hot solvents or monomers as a violent decomposition and/or reaction may result. When using spray equipment, never spray raw peroxide onto curing or into raw resin or flues. Keep peroxide in its original container. DO NOT USE NEAR FOOD OR DRINK. Wash thoroughly after handling. Protect from contamination. Keep tightly sealed in original packing. Risk of decomposition. Wash thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

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Storage

The stability of peroxide formulations us directly related to the shipping and storage temperature history. Cool storage at 80° F (27°C) or below is recommended for longer shelf life and stability. Prolonged storage at elevated temperatures of 100° F (38°C) and higher will cause product degradation, gassing and potential container rupture which can result in a fire and/or explosion. Store out of direct sunlight in a well ventilated area away from combustible and incompatible material. DO NOT STORE WITH FOOD OR DRINK.

Refer to NFPA 400 Hazardous Materials Code from the National Fire Protection Association for additional storage information.

Further information

Store apart from other dangerous and incompatible substances.

STORE BELOW 38 °C (100 °F).

Keep away from direct sunlight.

Keep containers tightly closed in a cool, well-ventilated place.

8. Exposure controls/personal protection

8.1. Control parameters

Methyl ethyl i	Methyl ethyl ketone peroxide		
CAS-No. Control parameters	1338-23-4 0.2 ppm	Ceiling Limit Value:(ACGIH)	
Control parameters	0.2 ppm 1.5 mg/m3	Ceiling Limit Value:(US CA OEL)	
Dimethyl phthalate			
CAS-No. Control parameters	131-11-3 5 mg/m3	Time Weighted Average (TWA):(ACGIH)	
Control parameters	5 mg/m3	Permissible exposure limit:(OSHA Z1)	
Control parameters	5 mg/m3	Time Weighted Average (TWA) Permissible Exposure Limit (PEL):(US CA OEL)	
Methyl ethyl i	Methyl ethyl ketone		
CAS-No. Control parameters	78-93-3 200 ppm	Time Weighted Average (TWA):(ACGIH)	
Control parameters	300 ppm	Short Term Exposure Limit (STEL):(ACGIH)	
Control parameters	200 ppm 590 mg/m3	Permissible exposure limit:(OSHA Z1)	
Control parameters	200 ppm 590 mg/m3	Time Weighted Average (TWA) Permissible Exposure Limit (PEL):(US CA OEL)	
Control parameters	300 ppm 885 mg/m3	Short Term Exposure Limit (STEL):(US CA OEL)	
Hydrogen per	oxide		
CAS-No. Control parameters	7722-84-1 1 ppm	Time Weighted Average (TWA):(ACGIH)	
Control parameters	1 ppm 1.4 mg/m3	Permissible exposure limit:(OSHA Z1)	
Control parameters	1 ppm 1.4 mg/m3	Time Weighted Average (TWA) Permissible Exposure Limit (PEL):(US CA OEL)	

8.2. Exposure controls

Engineering measures

Local exhaust and mechanical ventilation recommended.

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8.3. Personal protective equipment

Respiratory protection

A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 or applicable federal/provincial requirements must be followed whenever workplace conditions warrant respirator use. NIOSH's "Respirator Decision Logic" may be useful in determining the suitability of various types of respirators.

Hand protection

Wear protective gloves made of the following materials:.

Solvent-resistant gloves (butyl-rubber)

Nitrile rubber

Neoprene gloves

Skin should be washed after contact.

Eye protection

Use chemical splash goggles or face shield.

Skin and body protection

A safety shower and eye wash fountain should be readily available.

To identify additional Personal Protective Equipment (PPE) requirements, it is recommended that a hazard assessment in accordance with the OSHA PPE Standard (29CFR1910.132) be conducted before using this product.

Hygiene measures

Do not eat, drink or smoke during use.

Wash hands before breaks and immediately after handling the product.

Protective measures

Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

physical state liquid
Colour red
Form liquid
Odour slight

Odour Threshold No data available

pH Not applicable

Melting point/range No data available

Boiling point/boiling

not determined

range

Flash point 76 °C (Seta closed cup)

Evaporation rate not determined

Flammability (solid, gas) Not applicable

Lower explosion limit No data available

Upper explosion limit No data available

Vapour pressure No data available

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Relative vapour density > 1

Relative density 1.1

Water solubility soluble

Solubility/qualitative No data available

Partition coefficient: n-

octanol/water

No data available

Auto-ignition

No data available

temperature

Thermal decomposition > 60 °C

Viscosity, dynamic No data available

Viscosity, kinematic not determined

9.2. Other information

Peroxides The substance or mixture is an organic peroxide classified as type D.

SADT SADT > 60 °C

10. Stability and reactivity

10.1. Reactivity

Stable under recommended storage conditions.

10.2. Chemical stability

Contact with incompatible substances can cause disintegration at or below SADT.

10.3. Possibility of hazardous reactions

Stability Stable under recommended storage conditions.

Possibility of hazardous Vapors may form explosive mixtures with air.

reactions

10.4. Conditions to avoid

Keep away from heat and sources of ignition.

Exposure to sunlight.

Prolonged storage above 100°F (38°). Storage above SADT. Storage near flammable or combustible material.

10.5. Incompatible materials

Keep away from strong acids, bases, heavy metals, salts, reducing agents and accelerators. Contaminants (e.g. rust, dust, ash). Combustible materials., Risk of decomposition. Dimethylaniline, cobalt napthenate and other promoters, accelerators, reducing agents, or any hot material.

10.6. Hazardous decomposition products

Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke)., Irritant, caustic, flammable, noxious/toxic gases and vapors can develop in the case of fire and decomposition., Acrid smoke and irritating fumes.

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11. Toxicological information

11.1. Information on toxicological effects

No toxicological studies are available on the mixture.

carcinogenicity assessment No component of this product present at levels greater than or equal to

0.1% is identified as a known or anticipated carcinogen by NTP.

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by

IARC.

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Toxicological information on components Methyl ethyl ketone peroxide

Acute oral toxicity LD50 Oral Rat(male): 1017 mg/kg

Skin irritation / Causes severe skin burns and eye damage.

Causes burns.

Eye irritation / Causes serious eye damage.

Risk of serious damage to eyes.

Dimethyl phthalate

Acute oral toxicity LD50 Oral Rat: 8200 mg/kg

Acute inhalation toxicity LC50: 10.4 mg/l / 6 h

Assessment: H332: Harmful if inhaled.

Acute dermal toxicity LD50 Dermal Rat: > 12000 mg/kg

Skin irritation No skin irritation

Eye irritation No eye irritation

Sensitisation Not sensitizing.

Phlegmatizer

Acute oral toxicity LD50 Oral Rat(female): > 2000 mg/kg

Acute inhalation toxicity LCLo Rat: > 0.12 mg/l / 6 h

Acute dermal toxicity LD50 Dermal Rat(male/female): > 2000 mg/kg

Skin irritation No skin irritation

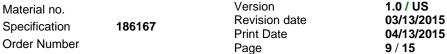
Eye irritation No eye irritation

Hydrogen peroxide

Acute oral toxicity LD50 Oral Rat(male): 1026 mg/kg

Test substance: Hydrogen peroxide >= 50%

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LD50 Oral Rat(female): 693.7 mg/kg

Test substance: Hydrogen peroxide >= 50%

Acute inhalation toxicity Assessment: Harmful if inhaled.

Acute dermal toxicity LD50 Dermal Rat(male and female): > 2000 mg/kg

Skin irritation Corrosive

Eye irritation Corrosive

Sensitisation Not sensitizing.

Assessment of STOT single

exposure

Assessment: May cause respiratory irritation.

Methyl ethyl ketone

Acute oral toxicity LD50 Oral Rat: 2737 mg/kg

Acute inhalation toxicity LC50 Rat: 23500 mg/l / 8 h

Acute dermal toxicity LD50 Rabbit: 6480 mg/kg

Eye irritation / Irritating to eyes.

irritating

Assessment of STOT single

exposure

Target Organs: Central nervous system

Assessment: May cause drowsiness or dizziness.

Mutagenicity assessment This product may cause mutagenic effects.

N-methyl-2-pyrrolidone

Acute oral toxicity LD50 Oral rat(male/female): 4150 mg/kg

Method: analogy OECD TG 401

Acute inhalation toxicity LC50 rat(male/female): > 5.1 mg/l / 4 h / Aerosol

Method: OECD Test Guideline 403

(limit test)

Acute dermal toxicity LD50 Dermal Rat(male/female): > 5000 mg/kg

Method: Analogy OECD-method

Skin irritation Rabbit

Irritating to skin.

Method: Draize Test

Eye irritation Rabbit

Irritating to eyes.

Method: Draize Test

Sensitisation species not listed: not sensitizing to the skin

Assessment of STOT single

exposure

Assessment: May cause respiratory irritation.

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CMR assessment

Teratogenicity Some evidence of adverse effects on sexual function and fertility, and/or on

development, based on animal experiments.

12. Ecological information

12.1. Toxicity

Toxicity to fish There is no data available for this product.

Toxicity in aquatic

invertebrates

No data is available on the product itself.

Toxicity to algae No data is available on the product itself.

12.2. Persistence and degradability

Biodegradability No data available

12.3. Bioaccumulative potential

Bioaccumulation No data available

12.4. Mobility in soil

Mobility No data available

12.5. Other adverse effects

Further Information Avoid release to the environment.

13. Disposal considerations

13.1. Waste treatment methods

Product

Waste must be disposed of in accordance with federal, state and local regulations. Incineration is the preferred method of disposal. Contact United Initiators for additional information. Empty containers must be handled with care due to product residue. DO NOT HEAT OR CUT THE EMPTY CONTAINER WITH ELECTRIC OR GAS TORCH.

Uncleaned packaging

Packaging material should be recycled or disposed of in accordance with federal, state and local regulations.

14. Transport information

D.O.T. Road/Rail

14.1. UN number: UN 3105

14.2. UN proper shipping name: Organic peroxide type D, liquid(Methyl ethyl ketone peroxide

<= 45%)

14.3. Transport hazard class(es): 5.2

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14.4. Packing group: II14.5. Environmental hazards (Marine ---

pollutant):

14.6. Special precautions for user: No

Air transport ICAO-TI/IATA-DGR

14.1. UN number: UN 3105

14.2. UN proper shipping name: Organic peroxide type D, liquid(Methyl ethyl ketone peroxide

<= 45%)

14.3. Transport hazard class(es):
14.4. Packing group:
14.5. Environmental hazards:
14.6. Special precautions for user:
Yes

IATA-C: ERG-Code 5L

Must be protected from direct sunlight and stored away from all sources of heat in a well-

ventilated area.

IATA-P: ERG-Code 5L

Must be protected from direct sunlight and stored away from all sources of heat in a well-

ventilated area.

Sea transport IMDG-Code/GGVSee (Germany)

14.1. UN number: UN 3105

14.2. UN proper shipping name: ORGANIC PEROXIDE TYPE D, LIQUID(Methyl ethyl ketone

peroxide <= 45%)

14.3. Transport hazard class(es): 5.2
14.4. Packing group: -14.5. Environmental hazards (Marine --

pollutant):

14.6. Special precautions for user: Yes EmS: F-J,S-R

"Separated from" acids and alkalis. Protected from sources of heat.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:

for transportapproval see regulatory information

15. Regulatory information

US Federal Regulations

OSHA

If listed below, chemical specific standards apply to the product or components:

None listed

Clean Air Act Section (112)

If listed below, components present at or above the de minimus level are hazardous air pollutants:

Dimethyl phthalate

CAS-No. 131-11-3

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CERCLA Reportable Quantities

If listed below, a reportable quantity (RQ) applies to the product based on the percent of the named component:

Methyl ethyl ketone peroxide

CAS-No. 1338-23-4 Reportable Quantity 29 lbs

SARA Title III Section 311/312 Hazard Categories

The product meets the criteria only for the listed hazard classes:

- Acute Health Hazard
- Chronic Health Hazard
- Fire Hazard

SARA Title III Section 313 Reportable Substances

If listed below, components are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

Dimethyl phthalate

CAS-No. **131-11-3**

Methyl ethyl ketone

CAS-No. **78-93-3**

 N-methyl-2-pyrrolidone CAS-No. 872-50-4

Toxic Substances Control Act (TSCA)

If listed below, non-proprietary substances are subject to export notification under Section 12 (b) of TSCA:

None listed

State Regulations

California Proposition 65

A warning under the California Drinking Water Act is required only if listed below:

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

• N-methyl-2-pyrrolidone

CAS-No. 872-50-4

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International Chemical Inventory Status

Unless otherwise noted, this product is in compliance with the inventory listing of the countries shown below. For information on listing for countries not shown, contact the Product Regulatory Services Department.

listed/registered Europe (EINECS/ELINCS) USA (TSCA) listed/registered Canada (DSL) listed/registered Australia (AICS) listed/registered Japan (MITI) not listed/registered Korea (TCCL) not listed/registered Philippines (PICCS) not listed/registered China not listed/registered New Zealand not listed/registered

An employer using HMIS/NFPA labeling must through training ensure that its employees are fully aware of the hazards of the chemicals used.

HMIS Ratings

Health: 3* Flammability: 2 Physical Hazard: 2

NFPA Ratings

Health: 3 Flammability: 2 Reactivity: 2

16. Other information

Further information

Revision date 03/13/2015

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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Legend

ACC American Chemistry Council

ACGIH American Conference of Governmental Industrial Hygenists

ACS Advisory Committee on Sustainability

ADI Acceptable Daily Intake

ASTM American Society for Testing and Materials

ATP Adaptation to Technical Progress

BCF Bioconcentration factor
BOD Biochemical oxygen demand

c.c. closed cup

CAO Cargo Aircraft Only

Carc Carcinogen

CAS Chemical Abstract Services

CDN Canada

CEPA Canadian Environmental Protection Act

CERCLA Comprehensive Environmental Response – Compensation and Liability Act

CFR Code of Federal Regulations

CMR carcinogenic-mutagenic-toxic for reproduction

COD Chemical oxygen demand

DIN German Institute for Standardization
DMEL Derived minimum effect level
DNEL Derived no effect level
DOT Department of Transportation
EC50 half maximal effective concentration
EPA Environmental Protection Agency
EPGE Description of Crowth Page

ErC50 Reduction of Growth Rate

ERG Emergency Response Guide Book FDA Food and Drug Administration

GHS Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

GLP Good Laboratory Practice
GMO Genetic Modified Organism
HCS Hazard Communication Standard

HMIS Hazardous Materials Identification System
IARC International Agency for Research on Cancer
IATA International Air Transport Association

IBC Intermediate Bulk Container

ICAO-TI International Civil Aviation Organization- Technical Instructions

ICCA International Council of Chemical Association

ID Identification number

IMDG International Maritime Dangerous Goods

IUPAC International Union of Pure and Applied Chemistry
ISO International Organization For Standardization

LC50 50 % Lethal Concentration

LD50 50 % Lethal Dose **L(E)C50** LC50 or EC50

LOAEL Lowest observed adverse effect level

LOEL Lowest observed effect level

MARPOL International Convention for the Prevention of Pollution from Ships

NFPA National Fire Protection Association
NOAEL No observed adverse effect level
NOEC no observed effect concentration

NOEL no observed effect level

o. c. open cup

OECD Organisation for Economic Cooperation and Development

OEL Occupational Exposure Limit

OSHA Occupational Safety and Health Administration

PBT Persistent, bioaccumulative, toxic
PEC Predicted effect concentration
PNEC Predicted no effect concentration

RQ Reportable Quantity SDS Safety Data Sheet

STOT Specific Target Organ Toxicity

UN United Nations

vPvB very persistent, very bioaccumulative

voc volatile organic compounds

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WHMIS Workplace Hazardous Materials Information System World Health Organization

WHO