SAFETY DATA SHEET NOROX® MEKP-9			
Material no. Specification 185546 Order Number	Version Revision date Print Date Page	1.0 / US 12/18/2014 04/13/2015 1 / 15	driving your success

# 1. Identification

# 1.1. Product identifier

Trade name

NOROX® MEKP-9

# 1.2. Recommended use of the chemical and restrictions on use

Relevant applications identified Curing agent (polymer technology)

# 1.3. Details of the supplier of the safety data sheet

Company	I

United Initiators, Inc. 334 Phillips 311 Rd. Helena, AR 72342-9033 USA

Cs-initiators.nafta@united-in.com

Telephone

Telefax

1.4.

870-572-1416

Email address

# 24 HOUR EMERGENCY TELEPHONE NUMBERS:

CHEMTREC – US & CANADA:	800-424-9300
CHEMTREC INTERNATIONAL:	+1 703-527-3887 (collect calls accepted)
Product Regulatory	800-231-2702

870-572-2935

Information

#### 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
Acute aquatic toxicity	Category 3	H402
Chronic aquatic toxicity	Category 3	H412

# 2.2. Label elements Statutory basis

Symbol(s)

Classification according to Regulation 29CFR 1910.1200



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Material no. Specification 185546 Order Number	Version Revision date Print Date Page	1.0 / US 12/18/2014 04/13/2015 2 / 15	UNITED INITIATORS
Signal word	Danger		
Hazard statement	H227 - Combustible liquid H242 - Heating may cause a fire H314 - Causes severe skin burr H412 - Harmful to aquatic life w	is and eye damage.	
Precautionary statement: Prevention	P210 - Keep away from heat, he sources. No smoking. P220 - Keep/Store away from c other reducing substances /com P234 - Keep only in original con P260 – Do not breathe dust or r P264 - Wash skin thoroughly af P273 - Avoid release to the env P280 - Wear protective gloves/	othing/ strong acids, k bustible materials. tainer. nist. er handling. ronment.	bases, heavy metal salts and
Precautionary statement: Reaction	<ul> <li>P301 + P330 + P331 - IF SWAL</li> <li>P303 + P361 + P353 - IF ON SI clothing. Rinse skin with water/s</li> <li>P304 + P340 - IF INHALED: Rebreathing.</li> <li>P305 + P351 + P338 - IF IN EY</li> <li>Remove contact lenses, if prese</li> <li>P310 - Immediately call a POIS</li> <li>P363 - Wash contaminated clot</li> <li>P370 + P378 - In case of fire: U or carbon dioxide to extinguish.</li> <li>P391 - Collect spillage.</li> </ul>	KIN (or hair): Take off hower. move person to fresh ES: Rinse cautiously v ent and easy to do. Co ON CENTER/doctor. hing before reuse.	immediately all contaminated air and keep comfortable for with water for several minutes. ontinue rinsing.
Precautionary statement: Storage	P403 + P235 - Store in a well-ve P405 - Store locked up. P411 - Store at temperatures no P420 - Store away from other m	ot exceeding 38°C (10	
Precautionary statement: Disposal	P501 - Dispose of contents/ cor	tainer to an approved	waste disposal plant.

#### Other hazards 2.3.

None known.

#### Composition/information on ingredients 3.

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	
Remarks Not a hazardous substance or	mixture.
Phlegmatizer	6% - 26%

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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 system) • Hydrogen peroxide <= 1%	Category 2 Category 2A Category 3
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

# 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.

#### 5. Fire-fighting 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

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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

#### 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. Keep away from direct sunlight.

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

# 8. Exposure controls/personal protection

#### 8.1. Control parameters

Control paramet	ers	
Methyl ethyl I	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 phtł	nalate	
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	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	roxide	
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.

# 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.

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# 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 Colour Form Odour	liquid Water-white. liquid slight
Odour Threshold	No data available
рН	not applicable
Melting point/range	no data available
Boiling point/range	not determined
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
Relative vapour density	> 1
Relative density	1.1
Water solubility	soluble
	Colour Form Odour Odour Odour Threshold pH Melting point/range Boiling point/range Flash point Evaporation rate Flammability (solid, gas) Lower explosion limit Upper explosion limit Vapour pressure Relative vapour density Relative density

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	Solubility/qualitative	no data avai	lable	
Partition coefficient (n- octanol/water) Autoignition temperature	no data avai	lable		
	Autoignition temperature	no data avai	lable	
	Thermal decomposition	> 60 °C		
	Viscosity, dynamic	no data available		
	Viscosity, kinematic	not determined		
	Other information			
	peroxides	The substan	ce or mixture is an organic peroxide classified as type D.	
	SADT	SADT	> 60 °C	

#### 10. Stability and reactivity

#### 10.1. Reactivity

9.2.

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

StabilityStable under recommended storage conditions.Possibility of hazardousVapors may form explosive mixtures with air.reactionsVapors may form explosive mixtures with air.

# 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.

#### 11. Toxicological information

#### 11.1. Information on toxicological effects

No toxicological studies are available on the mixture. carcinogenicity assessment NTP: No component of this product present at levels greater than or equal

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	to 0.1% is identified as p by IARC. OSHA: No component o	this product present probable, possible or of this product preser	ed carcinogen by NTP. at levels greater than or equination confirmed human carcinogen at at levels greater than or r potential carcinogen by		
Toxicological inforr Methyl ethyl ketone	nation on components peroxide				
Acute oral toxicity	LD50 Oral Rat(male): 1	017 mg/kg			
Skin irritation	Causes severe skin bur Causes burns.	ns and eye damage.			
Eye irritation		Causes serious eye damage. Risk of serious damage to eyes.			
Dimethyl phthalate Acute oral toxicity	LD50 Oral Rat: 8200 m	g/kg			
Acute inhalation toxicity	LC50 : 10.4 mg/l / 6 h Assessment: H332: H	5			
Acute dermal toxicity	LD50 Dermal Rat: > 120	000 mg/kg			
Skin irritation	No skin irritation	No skin irritation			
Eye irritation	No eye irritation	No eye irritation			
Sensitization	Not sensitizing.	Not sensitizing.			
Phlegmatizer Acute oral toxicity	LD50 Oral Rat(female):	> 2000 mg/kg			
Acute inhalation toxicity	LCLo Rat: > 0.12 mg/l				
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): 1	026 mg/kg en peroxide >= 50%			
	LD50 Oral Rat(female):	693 7 ma/ka			

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Acute inhalation toxicit	y Assessment:	Harmful if inhaled.		
Acute dermal toxicity	LD50 Derma	IRat(male and female): > 200	00 mg/kg	
Skin irritation	corrosive			
Eye irritation	corrosive	corrosive		
Sensitization	Not sensitizir	Not sensitizing.		
Assessment of STOT s exposure	single Assessment:	May cause respiratory irrita	ation.	
Methyl ethyl ketor Acute oral toxicity		at: 2737 mg/kg		
Acute inhalation toxicit	y LC50 Rat: 2	LC50 Rat: 23500 mg/l / 8 h		
Acute dermal toxicity LD50 Rabbit: 6480 mg/kg		: 6480 mg/kg		
Eye irritation	Irritating to e irritating	yes.		
Assessment of STOT s exposure	single Target Organs: Assessment:	Central nervous system May cause drowsiness or o	dizziness.	
Mutagenicity assessme	ent This product	This product may cause mutagenic effects.		

# 12. Ecological information

12.1.	Toxicity
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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

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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

D.U.T. KUdu/Kali	
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:	ll
14.5. 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):	5.2
14.4. Packing group:	
14.5. Environmental hazards:	
14.6. Special precautions for user: IATA-C: ERG-Code 5L	Yes
Must be protected from ventilated area.	direct sunlight and stored away from all sources of heat in a well-
IATA-P: ERG-Code 5L	
Must be protected from ventilated area.	direct sunlight and stored away from all sources of heat in a well-
Sea transport IMDG-Code/GGVSee (Ge	rmany)
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

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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

# **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
- 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:

None listed

#### **Toxic Substances Control Act (TSCA)**

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

None listed

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## **State Regulations**

# **California Proposition 65**

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

• None listed

# **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.

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

12/18/2014

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

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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. CAO	closed cup 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 EC50	Department of Transportation half maximal effective concentration
EPA	Environmental Protection Agency
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
	International Agency for Research on Cancer
IATA IBC	International Air Transport Association 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 LOEL	Lowest observed adverse effect level 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
0. C.	open cup
OECD	Organisation for Economic Cooperation and Development
OEL	Occupational Exposure Limit
	Occupational Safety and Health Administration
PBT PEC	Persistent, bioaccumulative, toxic Predicted effect concentration
PEC	Predicted effect concentration Predicted no effect concentration
RQ	Reportable Quantity
SDS	Safety Data Sheet
STOT	Specific Target Organ Toxicity
UN	United Nations
vPvB	very persistent, very bioaccumulative

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voc WHMIS WHO volatile organic compounds Workplace Hazardous Materials Information System World Health Organization