



## Material Safety Data Sheet

### Toluene

Version 1.2

Revision Date: 07/15/2014

#### SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

**Product name** : Toluene  
**Product Use Description** : industrial chemical

##### Manufacturer or supplier's details

**Company** : Nexeo Solutions LLC  
**Address** : 3 Waterway Square Place Suite 1000  
Woodlands, Tx. 77380

##### Emergency telephone number:

Health North America: 1-855-NEXEO4U (1-855-639-3642)  
Health International: 1-855-NEXEO4U (1-855-639-3642)  
Transport North America: CHEMTREC 800.424.9300

**Additional Information:** : Responsible Party: Product Safety Group  
E-Mail: [msds@nexeosolutions.com](mailto:msds@nexeosolutions.com)  
MSDS Requests: 1-855-429-2661  
MSDS Requests Fax: 1-281-500-2370  
Website: [www.nexeosolutions.com](http://www.nexeosolutions.com)

#### SECTION 2. HAZARDS IDENTIFICATION

##### GHS Classification

Flammable liquids : Category 2  
Skin irritation : Category 2  
Reproductive toxicity : Category 2  
Specific target organ toxicity - single exposure : Category 3 (Central nervous system)  
Specific target organ toxicity - repeated exposure (Inhalation) : Category 2 (Auditory system, Eyes)  
Aspiration hazard : Category 1

##### GHS Label element

Hazard pictograms





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- Signal word : Danger
- Hazard statements : H225 Highly flammable liquid and vapour.  
H304 May be fatal if swallowed and enters airways.  
H315 Causes skin irritation.  
H336 May cause drowsiness or dizziness.  
H361 Suspected of damaging fertility or the unborn child.  
H373 May cause damage to organs through prolonged or repeated exposure if inhaled.
- Precautionary statements : **Prevention:**  
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P233 Keep container tightly closed.  
P240 Ground/bond container and receiving equipment.  
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.  
P264 Wash skin thoroughly after handling.  
P280 Wear protective gloves/ eye protection/ face protection.  
**Response:**  
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.  
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
P304 + P340 + P312 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.  
P331 Do NOT induce vomiting.  
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.  
**Storage:**  
P403 + P235 Store in a well-ventilated place. Keep cool.  
P405 Store locked up.  
**Disposal:**  
P501 Dispose of contents/ container to an approved waste disposal plant.

#### Potential Health Effects

##### Carcinogenicity:

###### IARC

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.

###### ACGIH

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



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	potential carcinogen by ACGIH.
<b>OSHA</b>	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.
<b>NTP</b>	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.

### Emergency Overview

Appearance	liquid
Colour	colourless, transparent
Odour	sweet, pungent, hydrocarbon-like, aromatic, pleasant
Hazard Summary	No information available.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Hazardous components

CAS-No.	Chemical Name	Concentration (%)
108-88-3	Toluene	90 - 100

### SECTION 4. FIRST AID MEASURES

General advice	: Move out of dangerous area. Show this safety data sheet to the doctor in attendance. Symptoms of poisoning may appear several hours later.
If inhaled	: Consult a physician after significant exposure. If unconscious place in recovery position and seek medical advice.
In case of skin contact	: If skin irritation persists, call a physician. If on skin, rinse well with water. If on clothes, remove clothes.
In case of eye contact	: Flush eyes with water as a precaution. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing.



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If swallowed : Clean mouth with water and drink afterwards plenty of water.  
Keep respiratory tract clear.  
Do NOT induce vomiting.  
Do not give milk or alcoholic beverages.  
Never give anything by mouth to an unconscious person.  
Take victim immediately to hospital.

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#### SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Alcohol-resistant foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical

Unsuitable extinguishing media : High volume water jet

Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : No hazardous combustion products are known

Specific extinguishing methods : Use a water spray to cool fully closed containers.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.  
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.  
For safety reasons in case of fire, cans should be stored separately in closed containments.

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

#### NFPA Flammable and Combustible Liquids Classification:

Flammable Liquid Class IB

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#### SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and : Use personal protective equipment.  
Ensure adequate ventilation.



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emergency procedures	Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
Environmental precautions	: Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	: Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

#### SECTION 7. HANDLING AND STORAGE

Advice on safe handling	: Avoid formation of aerosol. Do not breathe vapours/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Provide sufficient air exchange and/or exhaust in work rooms. Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations.
Conditions for safe storage	: No smoking. 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. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

#### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

##### Components with workplace control parameters



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CAS-No.	Components	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
108-88-3	Toluene	TWA	20 ppm	ACGIH
		TWA	100 ppm 375 mg/m <sup>3</sup>	NIOSH REL
		ST	150 ppm 560 mg/m <sup>3</sup>	NIOSH REL
		TWA	200 ppm	OSHA Z-2
		CEIL	300 ppm	OSHA Z-2
		Peak	500 ppm	OSHA Z-2
		TWA	100 ppm 375 mg/m <sup>3</sup>	OSHA P0
		STEL	150 ppm 560 mg/m <sup>3</sup>	OSHA P0

#### Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Toluene	108-88-3	Toluene	In blood	Prior to last shift of work-week	0.02 mg/l	ACGIH BEI
		Toluene	Urine	End of shift (As soon as possible after exposure ceases)	0.03 mg/l	ACGIH BEI
		o-Cresol	Urine	End of shift (As soon as possible after exposure ceases)	0.3 mg/g Creatinine	ACGIH BEI

#### Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.

In the case of vapour formation use a respirator with



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	an approved filter.
Hand protection Remarks	: The suitability for a specific workplace should be discussed with the producers of the protective gloves.
Eye protection	: Eye wash bottle with pure water Tightly fitting safety goggles
Skin and body protection	: impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Hygiene measures	: When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Colour	: colourless, transparent
Odour	: sweet, pungent, hydrocarbon-like, aromatic, pleasant
Odour Threshold	: 1.74 - 5 ppm
pH	: not applicable
Freezing Point (Melting point/freezing point)	: -95 °C (-139 °F)
Boiling Point (Boiling point/boiling range)	: 109 - 111 °C (228 - 232 °F)
Flash point	: 4 - 7 °C (39 - 45 °F)
Evaporation rate	: 2 - 2.4 butyl acetate=1
Flammability (solid, gas)	: No data available
Burning rate	: No data available
Upper explosion limit	: 6.7 - 8 %(V)



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Lower explosion limit	: 1.2 - 1.4 %(V)
Vapour pressure	: 22.5 - 24 mmHg @ 20 °C (68 °F)
Relative vapour density	: 3.14
Relative density	: 0.87
Density	: 0.865 g/cm <sup>3</sup> @ 25 °C (77 °F)
Bulk density	: No data available
Solubility(ies)	
Water solubility	: soluble
Solubility in other sol- vents	: No data available
Partition coefficient: n- octanol/water	: No data available
Auto-ignition temperature	: 536 °C
Thermal decomposition	: No data available

#### SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: Vapours may form explosive mixture with air.
Conditions to avoid	: Extremes of temperature and direct sunlight. Heat, flames and sparks.
Incompatible materials	: Strong oxidizing agents





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#### SECTION 11. TOXICOLOGICAL INFORMATION

##### Acute toxicity

###### Product:

Acute oral toxicity : Acute toxicity estimate : > 5,000 mg/kg  
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate : 5,000 mg/kg  
Method: Calculation method

###### Components:

###### **108-88-3:**

Acute oral toxicity : LD50 (rat, male): > 5,580 mg/kg

Acute inhalation toxicity : LC50 (rat, male and female): 28.1 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour  
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (rabbit): > 5,000 mg/kg

##### Skin corrosion/irritation

###### Product:

Remarks: May cause skin irritation in susceptible persons.

###### Components:

###### **108-88-3:**

Species: rabbit  
Exposure time: 4 h  
Classification: Irritating to skin.  
Result: Irritating to skin.  
GLP: yes

##### Serious eye damage/eye irritation

###### Product:

Remarks: Vapours may cause irritation to the eyes, respiratory system and the skin.

###### Components:

###### **108-88-3:**

Species: rabbit  
Result: Slightly irritating to eyes  
Classification: Not irritating to eyes  
Method: OECD Test Guideline 405



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GLP: yes

#### Respiratory or skin sensitisation

##### Components:

###### **108-88-3:**

Test Type: Maximisation Test (GPMT)

Species: guinea pig

Assessment: Does not cause skin sensitisation.

Result: Does not cause skin sensitisation.

GLP: yes

#### Germ cell mutagenicity

##### Components:

###### **108-88-3:**

Genotoxicity in vitro

: Test Type: Mammalian cell gene mutation assay  
Test species: Mouse lymphoma cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: negative

: Test Type: Ames test  
Metabolic activation: with and without metabolic activation  
Result: negative

Genotoxicity in vivo

: Test Type: Chromosome aberration assay in vivo  
Test species: rat  
Cell type: Bone marrow  
Application Route: Intraperitoneal  
Exposure time: 1 or 5 d  
Dose: 0, 0.025, 0.082, 0.247 mL/kg  
Result: negative

Test Type: Dominant lethal assay  
Test species: mouse (male)  
Application Route: inhalation (vapour)  
Exposure time: 6 h/d, 5 d/wk for 8 wks  
Dose: 0, 100, 400 ppm  
Method: OECD Test Guideline 478  
Result: negative

Germ cell mutagenicity-  
Assessment

: Did not show mutagenic effects in animal experiments.



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### Carcinogenicity

#### Components:

##### **108-88-3:**

Species: rat, (male and female)  
Application Route: inhalation (vapour)  
Exposure time: 103 wks  
Dose: 0, 600, 1200 ppm  
Frequency of Treatment: 6.5 h/d, 5 d/wk  
NOAEL: No observed adverse effect level: 1,200 ppm

Method: OECD Test Guideline 453  
Result: did not display carcinogenic properties  
Symptoms: Erosion of nasal epithelium  
GLP: yes

Carcinogenicity - Assessment : Not classifiable as a human carcinogen.

### Reproductive toxicity

#### Components:

##### **108-88-3:**

Effects on fertility : Test Type: Two-generation study  
Species: rat, male and female  
Application Route: Inhalation  
Dose: 0, 100, 500, 2000 ppm  
Frequency of Treatment: 7 days/week  
General Toxicity - Parent: NOAEC: 500 ppm  
General Toxicity F1: NOAEC: 500 ppm  
Fertility: NOAEC: 2,000 ppm  
Symptoms: Reduced maternal body weight gain. Reduced offspring weight gain.  
Method: OECD Test Guideline 416  
Result: Animal testing did not show any effects on fertility.  
GLP: yes

Test Type: Fertility  
Species: rat, male and female  
Application Route: inhalation (vapour)  
Dose: 0, 600, 1200 ppm  
Frequency of Treatment: 7 days/week  
General Toxicity - Parent: NOAEC: 600 ppm  
Symptoms: Decreased sperm count  
Result: Animal testing did not show any effects on fertility.

Effects on foetal development : Species: rat  
Application Route: inhalation (vapour)



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Dose: 0, 250, 750, 1500, 3000 ppm  
Duration of Single Treatment: 10 d  
Frequency of Treatment: 6 hr/day  
General Toxicity Maternal: NOAEC: 750 ppm  
Developmental Toxicity: NOAEC: 750 ppm  
Symptoms: Maternal toxicity, Reduced body weight,  
Skeletal malformations.  
GLP: yes

Reproductive toxicity - Assessment : Animal testing did not show any effects on fertility. Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

#### **STOT - single exposure**

Product:

No data available

Components:

No data available

#### **STOT - repeated exposure**

Product:

No data available

Components:

No data available

#### **Repeated dose toxicity**

**Components:**

**108-88-3:**

Species: mouse, male and female

NOAEL: 625 mg/kg

LOAEL: 1,250 mg/kg

Application Route: Oral

Exposure time: 13 wks

Number of exposures: 5 d/wk

Dose: 312, 625, 1250, 2500, 5000

Group: yes

GLP: yes

Symptoms: death, Increased liver weight, ataxia, hypoactivity, hypothermia

Species: rat, male and female

NOAEL: 300

Application Route: inhalation (vapour)

Exposure time: 6, 12, or 18 mths



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Number of exposures: 6 h/d, 5 d/wk  
Dose: 0, 30, 100, 300 ppm  
Method: OECD Test Guideline 453

Repeated dose toxicity - : Causes skin irritation.  
Assessment

#### Aspiration toxicity

##### Components:

##### **108-88-3:**

Aspiration Toxicity - Category 1

#### Further information

##### Product:

Remarks: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting., Concentrations substantially above the TLV value may cause narcotic effects., Solvents may degrease the skin.

## SECTION 12. ECOLOGICAL INFORMATION

#### Ecotoxicity

##### Components:

##### **108-88-3:**

Toxicity to fish : LC50 (Oncorhynchus kisutch (coho salmon)): 5.5 mg/l  
Exposure time: 96 h  
Test Type: flow-through test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Ceriodaphnia dubia): 3.78 mg/l  
Exposure time: 48 h  
Test Type: Renewal

Toxicity to algae : EC50 (Chlorella vulgaris (Fresh water algae)): 134 mg/l  
Exposure time: 3 h  
Test Type: static test

Toxicity to bacteria : IC50 (Bacteria): 84 mg/l  
Exposure time: 24 h  
Test Type: Static

Ecotoxicology Assessment  
Acute aquatic toxicity : Toxic to aquatic life.



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#### Persistence and degradability

##### Components:

##### **108-88-3:**

Biodegradability : Inoculum: Sewage  
Biodegradation: 100 %  
Remarks: Readily biodegradable

#### Bioaccumulative potential

##### Components:

##### **108-88-3:**

Partition coefficient: n- : log Pow: 2.73  
octanol/water

#### Mobility in soil

No data available

#### Other adverse effects

No data available

##### Product:

Regulation 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances

Remarks This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal., Toxic to aquatic life.

## SECTION 13. DISPOSAL CONSIDERATIONS

#### Disposal methods

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.  
For assistance with your waste management needs - including disposal, recycling and waste stream reduction, contact NEXEO's Environmental Services Group at 800-637-7922.

Contaminated packaging : Empty remaining contents.  
Dispose of as unused product.  
Do not re-use empty containers.  
Do not burn, or use a cutting torch on, the empty



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drum.

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#### SECTION 14. TRANSPORT INFORMATION

**IATA (International Air Transport Association):** UN1294, TOLUENE, 3, II

**IMDG (International Maritime Dangerous Goods):** UN1294, TOLUENE, 3, II, Flash Point: 4 - 7 °C (39 - 45 °F)

**DOT (Department of Transportation):** UN1294, TOLUENE, 3, II

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#### SECTION 15. REGULATORY INFORMATION

**OSHA Hazards** : Flammable liquid, Moderate skin irritant, Teratogen, Reproductive hazard

##### EPCRA - Emergency Planning and Community Right-to-Know Act

##### CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Toluene	108-88-3	1000	1000

##### SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

**SARA 311/312 Hazards** : Fire Hazard  
Acute Health Hazard  
Chronic Health Hazard

**SARA 302** : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313** : The following components are subject to reporting levels established by SARA Title III, Section 313:

108-88-3      Toluene      100 %

##### Clean Air Act

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):



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108-88-3	Toluene	100 %
100-41-4	Ethylbenzene	0.0999 %
71-43-2	Benzene	0.0999 %
98-82-8	Cumene	0.0004 %

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40 CFR 60.489):

108-88-3	Toluene	100 %
100-41-4	Ethylbenzene	0.0999 %
71-43-2	Benzene	0.0999 %
98-82-8	Cumene	0.0004 %

#### Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

108-88-3	Toluene	100 %
100-41-4	Ethylbenzene	0.0999 %
71-43-2	Benzene	0.0999 %

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

108-88-3	Toluene	100 %
100-41-4	Ethylbenzene	0.0999 %
71-43-2	Benzene	0.0999 %

This product contains the following toxic pollutants listed under the U.S. Clean Water Act Section 307

108-88-3	Toluene	100 %
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#### US State Regulations

##### Massachusetts Right To Know

108-88-3	Toluene	90 - 100 %
71-43-2	Benzene	0 - 0.1 %

##### Pennsylvania Right To Know

108-88-3	Toluene	90 - 100 %
100-41-4	Ethylbenzene	0 - 0.1 %
71-43-2	Benzene	0 - 0.1 %

##### New Jersey Right To Know

108-88-3	Toluene	90 - 100 %
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##### California Prop 65

	WARNING! This product contains a chemical known to the State of California to cause cancer.
100-41-4	Ethylbenzene
71-43-2	Benzene
98-82-8	Cumene

	WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.
108-88-3	Toluene





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71-43-2 Benzene

### The components of this product are reported in the following inventories:

<b>1907/2006 (EU)</b>	:	n (Negative listing) (Not in compliance with the inventory)
<b>Switzerland. New notified substances and declared preparations</b>	:	y (positive listing) (The formulation contains substances listed on the Swiss Inventory)
<b>United States TSCA Inventory</b>	:	y (positive listing) (On TSCA Inventory)
<b>Canadian Domestic Substances List (DSL)</b>	:	y (positive listing) (All components of this product are on the Canadian DSL.)
<b>Australia Inventory of Chemical Substances (AICS)</b>	:	y (positive listing) (On the inventory, or in compliance with the inventory)
<b>New Zealand. Inventory of Chemical Substances</b>	:	y (positive listing) (On the inventory, or in compliance with the inventory)
<b>Japan. ENCS - Existing and New Chemical Substances Inventory</b>	:	y (positive listing) (On the inventory, or in compliance with the inventory)
<b>Japan. ISHL - Inventory of Chemical Substances (METI)</b>	:	y (positive listing) (On the inventory, or in compliance with the inventory)
<b>Korea. Korean Existing Chemicals Inventory (KECI)</b>	:	y (positive listing) (On the inventory, or in compliance with the inventory)
<b>Philippines Inventory of Chemicals and Chemical Substances (PICCS)</b>	:	y (positive listing) (On the inventory,



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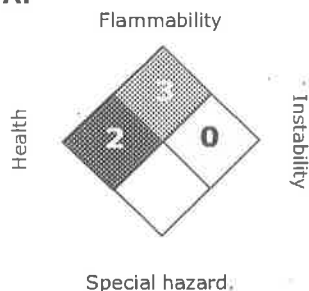
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	or in compliance with the inventory)
<b>China. Inventory of Existing Chemical Substances in China (IECSC)</b>	y (positive listing) (On the inventory, or in compliance with the inventory)

### SECTION 16. OTHER INFORMATION

#### Further information

##### NFPA:



##### HMIS III:

<b>HEALTH</b>	<b>2*</b>
<b>FLAMMABILITY</b>	<b>3</b>
<b>PHYSICAL HAZARD</b>	<b>0</b>

0 = not significant, 1 = Slight,  
2 = Moderate, 3 = High  
4 = Extreme, \* = Chronic

The information accumulated is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made become available subsequently to the date hereof, we do not assume any responsibility for the results of its use. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This MSDS has been prepared by NEXEO™ Solutions EHS Product Safety Department (1-855-429-2661) MSDS@nexeosolutions.com.

#### Material number:

16056696, 16056695, 16056694, 16056693, 16056692

Key or legend to abbreviations and acronyms used in the safety data sheet			
ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chem-	LOAEL	Lowest Observed Adverse Effect



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	ical Substances		Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50			Lethal Concentration 50%