

Safety Data Sheet

Perchloroethylene (All Grades)

Version 1.1

Revision Date: 12/11/2014

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Perchloroethylene (All Grades)
Product Use Description : Industrial chemical

Manufacturer or supplier's details

Company : Nexeo Solutions LLC
Address : 3 Waterway Square Place Suite 1000
 Woodlands, Tx. 77380
 United States of America

Emergency telephone number:

Health North America: 1-855-NEXEO4U (1-855-639-3648)

Health International: 1-855-NEXEO4U (1-855-639-3648)

Transport North America: CHEMTREC 800.424.9300

Additional Information: : Responsible Party: Product Safety Group
 E-Mail: msds@nexeosolutions.com
 SDS Requests: 1-855-429-2661
 SDS Requests Fax: 1-281-500-2370
 Website: www.nexeosolutions.com

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Carcinogenicity : Category 2

GHS Label element

Hazard pictograms :



Signal word : Danger

Hazard statements : H351 Suspected of causing cancer.

Precautionary statements : **Prevention:**
 P202 Do not handle until all safety precautions have been read and understood.
 P281 Use personal protective equipment as required.
Response:
 P308 + P313 IF exposed or concerned: Get medical advice/ attention.
Storage:
 P405 Store locked up.

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Disposal:

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

Potential Health Effects

Aggravated Medical Condition : None known.

Symptoms of Overexposure : Nausea
Headache
Dizziness
Fatigue
Unconsciousness
Dermatitis
Vomiting
Lack of coordination

Carcinogenicity:

IARC

Group 2A: Probably carcinogenic to humans

127-18-4 Tetrachloroethylene

Group 2B: Possibly carcinogenic to humans

56-23-5 Carbon tetrachloride

ACGIH

Suspected human carcinogen

56-23-5 Carbon tetrachloride

OSHA

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.

NTP

Reasonably anticipated to be a human carcinogen

127-18-4 Tetrachloroethylene

56-23-5 Carbon tetrachloride

Emergency Overview

Appearance	liquid
Colour	clear, colourless
Odour	mild, sweet, ether-like
Hazard Summary	No information available.

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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

Hazardous components

CAS-No.	Chemical Name	Concentration (%)
127-18-4	Tetrachloroethylene	90 - 100
56-23-5	Carbon tetrachloride	0.1 - 1

Molecular formula : C₂-Cl₄

Synonyms : TETRACHLOROETHENE, TETRACHLOROETHYLENE, PERCHLOROETHENE, PERCHLOROETHYLENE INDUSTRIAL, PERCHLOROETHYLENE ISO GRADE,

SECTION 4. FIRST AID MEASURES

General advice : Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled : If unconscious place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of eye contact : Flush eyes with water as a precaution.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Induce vomiting immediately and call a physician.
Keep respiratory tract clear.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.

Most important symptoms and effects, both acute and delayed : Nausea
Headache
Dizziness
Fatigue
Unconsciousness
Dermatitis
Vomiting
Lack of coordination

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Notes to physician : Do not give adrenaline or similar drugs.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use an extinguishing media appropriate for surrounding fire.

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.

Specific extinguishing methods : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
Wear a positive-pressure supplied-air respirator with full facepiece.
Exposure to decomposition products may be a hazard to health.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.

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 : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : Do not breathe vapours/dust.

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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.
 Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage : 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

CAS-No.	Components	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
127-18-4	Tetrachloroethylene	TWA	25 ppm	ACGIH
		STEL	100 ppm	ACGIH
		TWA	100 ppm	OSHA Z-2
		CEIL	200 ppm	OSHA Z-2
		Peak	300 ppm	OSHA Z-2
56-23-5	Carbon tetrachloride	TWA	25 ppm 170 mg/m ³	OSHA P0
		TWA	5 ppm	ACGIH
		STEL	10 ppm	ACGIH
		ST	2 ppm 12.6 mg/m ³	NIOSH REL
		TWA	10 ppm	OSHA Z-2
		CEIL	25 ppm	OSHA Z-2
		Peak	200 ppm	OSHA Z-2
		TWA	2 ppm 12.6 mg/m ³	OSHA P0

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Tetrachloroethylene	127-18-4	Tetrachloroethylene	In end-exhaled	Prior to shift	3 parts per million	ACGIH BEI

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			air	(16 hours after exposure ceases)		
		Tetrachloroethylene	In blood	Prior to shift (16 hours after exposure ceases)	0.5 mg/l	ACGIH BEI

Personal protective equipment

- Respiratory protection : In the case of vapour formation use a respirator with an approved filter.
Wear a positive-pressure supplied-air respirator with full facepiece.
- 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 : clear, colourless
- Odour : mild, sweet, ether-like
- Odour Threshold : 55 ppm

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pH	: No data available
Freezing Point (Freezing Point)	: -19 °C (-2 °F)
Boiling Point (Boiling point/boiling range)	: 121 °C (250 °F)
Flash point	: not applicable
Evaporation rate	: 0.1 - 0.33
Flammability (solid, gas)	: No data available
Burning rate	: No data available
Upper explosion limit	: No data available
Lower explosion limit	: No data available
Vapour pressure	: 13 - 18 mmHg @ 20 - 25 °C (68 - 77 °F)
Relative vapour density	: 5.8
Relative density	: 1.62 @ 25 °C (77 °F) Reference substance: (water = 1)
Density	: 1.619 g/cm ³ @ 77 °F (77 °F)
Bulk density	: 1.8 kg/m ³
Solubility(ies)	
Water solubility	: negligible
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: Pow: 2.88
Auto-ignition temperature	: not applicable
Thermal decomposition	: No data available
Viscosity	
Viscosity, dynamic	: 1 mPa.s

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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	: Hazardous polymerisation does not occur. Stable under recommended storage conditions.
Conditions to avoid	: Keep away from heat, flame, sparks and other ignition sources. elevated temperatures Exposure to moisture.
Incompatible materials	: Acids Bases Strong oxidizing agents Oxygen Peroxides reactive metals such as aluminum and magnesium Alkali metals Nitric acid Zinc Barium lithium Iron
Hazardous decomposition products	: Chlorine Phosgene Carbon oxides hydrogen chloride Trichloroacetic acid decomposes above 200 °C forming HCl, CO and Phosgene. Thermal decomposition can lead to release of irritating gases and vapours.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity : Acute toxicity estimate : 2,647 mg/kg
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate : > 40 mg/l

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Exposure time: 4 h
Test atmosphere: vapour
Method: Calculation method

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

Components:

127-18-4:

Acute oral toxicity : LD50 (rat, male): 3,835 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (mouse, male and female): 35 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (rabbit): 10,000 mg/kg

56-23-5:

Acute oral toxicity : LD50 (rat): 50 mg/kg
Assessment: The component/mixture is toxic after single ingestion.

Acute inhalation toxicity : (rat): 8 mg/l
Assessment: The component/mixture is toxic after short term inhalation.

Acute dermal toxicity : Assessment: The component/mixture is toxic after single contact with skin.

Skin corrosion/irritation

Components:

127-18-4:

Species: rabbit
Exposure time: 4 h
Method: OECD Test Guideline 404
Result: Irritating to skin.

56-23-5:

Species: rabbit
Result: Irritating to skin.

Serious eye damage/eye irritation

Components:

127-18-4:

Species: rabbit

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Result: Irritating to eyes.

56-23-5:

Species: rabbit

Result: Irritating to eyes.

Respiratory or skin sensitisation

Components:

127-18-4:

Test Type: lymph node assay

Species: mouse

Assessment: May cause sensitization by skin contact.

Method: OECD Test Guideline 429

Result: Weak sensitizer

Germ cell mutagenicity

Components:

127-18-4:

- | | |
|-----------------------|--|
| Genotoxicity in vitro | <ul style="list-style-type: none"> : Test Type: Chromosome aberration test in vitro Test species: Chinese hamster ovary (CHO) Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 473 Result: negative <ul style="list-style-type: none"> : Test Type: Ames test Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative <ul style="list-style-type: none"> : 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 |
| Genotoxicity in vivo | <ul style="list-style-type: none"> : Test Type: Chromosome aberration assay in vivo Test species: rat (male and female) Cell type: Bone marrow Application Route: Inhalation Exposure time: 1- 5 d, 7 h/d Dose: 0, 100, 500 ppm Result: Ambiguous <ul style="list-style-type: none"> Test Type: In vivo micronucleus test Test species: mouse (male) |

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Cell type: Peripheral blood reticulocytes
Application Route: Intraperitoneal
Exposure time: Single
Dose: 0, 500, 1000, 2000 mg/kg bw
Method: OECD Test Guideline 474
Result: negative

Test Type: DNA damage and/or repair
Test species: rat (male)
Cell type: Kidney cells
Application Route: Oral
Exposure time: 7 d
Dose: 0, 1000 mg/kg
Result: negative

Test Type: Chromosome aberration assay in vivo
Test species: rat (male and female)
Cell type: Bone marrow
Application Route: inhalation (vapour)
Exposure time: 52 wks, 6 h/d
Dose: 0, 300, 600 ppm
Result: negative

Germ cell mutagenicity-
Assessment : Did not show mutagenic effects in animal experi-
ments.

56-23-5:

Genotoxicity in vitro : Test Type: Ames test
Test species: Salmonella typhimurium
Method: OECD Test Guideline 471
Result: negative

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Test species: mouse
Method: OECD Test Guideline 474
Result: negative

Germ cell mutagenicity-
Assessment : Tests on bacterial or mammalian cell cultures did not
show mutagenic effects.

Carcinogenicity

Components:

127-18-4:

Species: mouse, (male and female)
Application Route: inhalation (vapour)
Exposure time: 103 wks
Dose: 0, 100, 200 ppm
Frequency of Treatment: 6 h/d, 5 d/wk
LOAEL: 100 ppm

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Method: OECD Test Guideline 451
Result: evidence of carcinogenic activity
Symptoms: increase incidence of hepatocellular carcinomas

Species: rat, (male and female)
Application Route: inhalation (vapour)
Exposure time: 103 wks
Dose: 0, 200, 400 ppm
Frequency of Treatment: 6 h/d, 5 d/wk
LOAEL: 200 ppm

Result: evidence of carcinogenic activity
Symptoms: Increased incidence of renal tubular cell carcinomas

Carcinogenicity - Assessment : Suspected human carcinogens

56-23-5:

Species: mouse
NOAEL: 9.9 mg/kg bw/day

Carcinogenicity - Assessment : Suspected human carcinogens

Reproductive toxicity

Components:

127-18-4:

Effects on fertility : Test Type: Two-generation study
Species: rat, male and female
Application Route: inhalation (vapour)
Dose: 0, 100, 300, 1000 ppm
General Toxicity - Parent: NOAEC: 100 ppm
General Toxicity F1: NOAEC: 100 ppm
Fertility: NOAEC: 1,000 ppm
Symptoms: Maternal effects. Clinical signs Reduced offspring weight gain.
Method: EPA OTS 798.4700
Result: Animal testing did not show any effects on fertility.
GLP: yes

Effects on foetal development : Species: rat
Application Route: inhalation (vapour)
Dose: 0, 75, 250, 600 ppm
Duration of Single Treatment: 14 d
Frequency of Treatment: 6 hr/day
General Toxicity Maternal: NOAEC: 250 ppm

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Developmental Toxicity: NOAEC: 250 ppm
Symptoms: Reduced body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects.
GLP: yes

Reproductive toxicity - Assessment : Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.

56-23-5:
Effects on foetal development : Species: rat
Embryo-foetal toxicity.: Lowest observed adverse effect level: 112.5 mg/kg body weight
Method: OECD Test Guideline 414

Reproductive toxicity - Assessment : teratogenicity classification is not possible

STOT - single exposure

Product: No data available

Components:

127-18-4:

Exposure routes:	Target Organs:	Assessment:	Remarks:
Inhalation	Central nervous system	May cause drowsiness or dizziness., The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.	

56-23-5:

Exposure routes:	Target Organs:	Assessment:	Remarks:
Inhalation	Central nervous system	May cause drowsiness or dizziness., The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.	

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STOT - repeated exposure

Product: No data available

Components:

127-18-4: No data available

56-23-5:

Exposure routes:	Target Organs:	Assessment:	Remarks:
Inhalation	Kidney, Liver	Causes damage to organs through prolonged or repeated exposure., The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1.	

Repeated dose toxicity

Components:

127-18-4:

Species: mouse, male
LOAEL: 540 mg/kg
Application Route: Oral
Exposure time: 78 wks
Number of exposures: 5 d/wk
Dose: 0, 540, 1070 mg/kg bw/day
Symptoms: Kidney disorders

Species: mouse, female
LOAEL: 330 mg/kg
Application Route: Oral
Exposure time: 78 wks
Number of exposures: 5 d/wk
Dose: 0, 390, 770 mg/kg bw/day
Symptoms: Kidney disorders

Species: rat, male and female
LOAEL: 200
Application Route: inhalation (vapour)
Exposure time: 103 wks
Number of exposures: 6 h/d, 5 d/wk
Dose: 0, 200, 400 ppm
Symptoms: Kidney disorders

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Species: mouse, male and female
 LOAEL: 100
 Application Route: inhalation (vapour)
 Exposure time: 103 wks
 Number of exposures: 6 h/d, 5 d/wk
 Dose: 0, 100, 200 ppm
 Symptoms: Liver effects, Kidney disorders, lung effects

Repeated dose toxicity - : Causes skin irritation., Causes eye irritation.
 Assessment

Aspiration toxicity

Components:

127-18-4:

No aspiration toxicity classification

Further information

Product:

Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

127-18-4:

Toxicity to fish	: LC50 (Limanda limanda (Marlin)): 5 mg/l Exposure time: 96 h Test Type: flow-through test
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): 8.5 mg/l Exposure time: 48 h Test Type: static test
Toxicity to algae	: EC50 (Chlamydomonas reinhardtii): 3.64 mg/l End point: Growth rate Exposure time: 72 h Test Type: Closed system
Ecotoxicology Assessment	
Acute aquatic toxicity	: Toxic to aquatic life.
Chronic aquatic toxicity	: Toxic to aquatic life with long lasting effects.

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56-23-5:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 24.3 mg/l
Exposure time: 4 d
Test Type: flow-through test
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 770 mg/l
Exposure time: 24 h
Test Type: static test

Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (green algae)): 20 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201

Ecotoxicology Assessment
Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

Persistence and degradability

Components:

127-18-4:

Biodegradability : Inoculum: activated sludge
Concentration: 100 mg/l
Biodegradation: 11 %
Exposure time: 28 d
Remarks: Not readily biodegradable.

56-23-5:

Biodegradability : anaerobic
Result: Readily biodegradable.
Remarks: Readily biodegradable

Bioaccumulative potential

Components:

127-18-4:

Partition coefficient: n-octanol/water : Pow: 3.40

56-23-5:

Partition coefficient: n-octanol/water : log Pow: 2.83 (25 °C)
pH: 7

Mobility in soil

No data available

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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	Warning: Manufactured with /\$, a substance which harms public health and environment by destroying ozone in the upper atmosphere.

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

Components:

56-23-5:

Ozone-Depletion Potential	1.1
Regulation	UNEP - Handbook for the Montreal Protocol on Substances that Deplete the Ozone Layer (Update: 2009-10-01)
Group	Annex B - Group II: Carbon tetrachloride
Ozone-Depletion Potential	1.1
Regulation	40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances (Update: 2007-07-01)
Group	Group IV
Additional ecological information	: Dangerous for the ozone layer.

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.

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SECTION 14. TRANSPORT INFORMATION

IATA (International Air Transport Association): UN1897, TETRACHLOROETHYLENE, 6.1, III

IMDG (International Maritime Dangerous Goods): UN1897, TETRACHLOROETHYLENE, 6.1, III

DOT (Department of Transportation): UN1897, TETRACHLOROETHYLENE, 6.1, III

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : Carcinogen

WHMIS Classification : D2A: Very Toxic Material Causing Other Toxic Effects

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

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Tetrachloroethylene	127-18-4	100	100

SARA 304 Extremely Hazardous Substances Reportable Quantity

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

SARA 311/312 Hazards : 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:

127-18-4	Tetrachloroethylene	100 %
56-23-5	Carbon tetrachloride	0.45 %

Clean Air Act

Ozone-Depletion Potential : carbon tetrachloride 56-23-5

Carbon Tetrachloride 56-23-5

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

127-18-4	Tetrachloroethylene	100 %
56-23-5	Carbon tetrachloride	0.45 %

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 I Intermediate or Final VOC's (40 CFR 60.489):

127-18-4	Tetrachloroethylene	100 %
56-23-5	Carbon tetrachloride	0.45 %

Clean Water Act

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

56-23-5	Carbon tetrachloride	0.45 %
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The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

56-23-5	Carbon tetrachloride	0.45 %
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This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

US State Regulations

Massachusetts Right To Know

127-18-4	Tetrachloroethylene	90 - 100 %
56-23-5	Carbon tetrachloride	0.1 - 1 %

Pennsylvania Right To Know

127-18-4	Tetrachloroethylene	90 - 100 %
56-23-5	Carbon tetrachloride	0.1 - 1 %

New Jersey Right To Know

127-18-4	Tetrachloroethylene	90 - 100 %
56-23-5	Carbon tetrachloride	0.1 - 1 %

California Prop 65

WARNING! This product contains a chemical known to the State of California to cause cancer.

127-18-4	Tetrachloroethylene
56-23-5	Carbon tetrachloride

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

1907/2006 (EU)	:	n (Negative listing) (Not in compliance with the inventory)
Switzerland. New notified substances and declared preparations	:	y (positive listing) (The formulation contains substances listed on the Swiss Inventory)

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United States TSCA Inventory	:	y (positive listing) (On TSCA Inventory)
Canadian Domestic Substances List (DSL)	:	y (positive listing) (All components of this product are on the Canadian DSL.)
Australia Inventory of Chemical Substances (AICS)	:	y (positive listing) (On the inventory, or in compliance with the inventory)
New Zealand. Inventory of Chemical Substances	:	n (Negative listing) (On the inventory, or in compliance with the inventory)
Japan. ENCS - Existing and New Chemical Substances Inventory	:	y (positive listing) (On the inventory, or in compliance with the inventory)
Japan. ISHL - Inventory of Chemical Substances (METI)	:	y (positive listing) (On the inventory, or in compliance with the inventory)
Korea. Korean Existing Chemicals Inventory (KECI)	:	y (positive listing) (On the inventory, or in compliance with the inventory)
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	:	y (positive listing) (On the inventory, or in compliance with the inventory)
China. Inventory of Existing Chemical Substances in China (IECSC)	:	y (positive listing) (On the inventory, or in compliance with the inventory)

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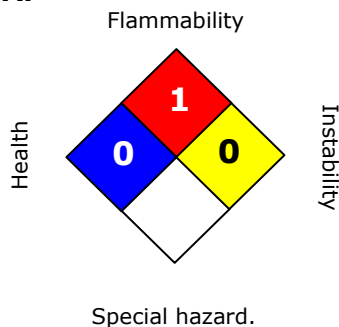
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SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

HEALTH	0*
FLAMMABILITY	1
PHYSICAL HAZARD	0

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.

Legacy MSDS: R0001042

Material number:

16056599, 16062193, 16056596, 16056598, 16056597, 16009752, 637625, 604780, 554102, 554349, 547485, 54914, 72995, 104807, 87675, 104196, 56039, 71265, 505397, 503744, 503743, 501951, 501344, 20233, 20232, 20231

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 Chemical Substances	LOAEL	Lowest Observed Adverse Effect 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

Safety Data Sheet

Perchloroethylene (All Grades)

Version 1.1

Revision Date: 12/11/2014

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%