SECTION 1. IDENTIFICATION

Identification of the company:	Clariant Corporation 4000 Monroe Road Charlotte, NC, 28205 Telephone No.: +1 704-331-7000 **Information of the substance/preparation:** BU Oil & Mining Services Product Stewardship +1-704-331-7710 **Emergency tel. number:** +1 800-424-9300(CHEMTREC)

Trade name: **LIBERATE WX 14034**
Material number: 287473

Chemical family: Mixture

Primary product use: Additive

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Flammable liquids	:	Category 3
Skin corrosion	:	Category 1B
Serious eye damage	:	Category 1
Germ cell mutagenicity	:	Category 1B
Carcinogenicity	:	Category 1B
Reproductive toxicity	:	Category 2
Specific target organ toxicity - single exposure	:	Category 3 (Central nervous system)
Specific target organ toxicity - repeated exposure	:	Category 2 (Kidney, Liver, Central nervous system)
Specific target organ toxicity - repeated exposure (Inhalation)	:	Category 2 (Central nervous system)
Aspiration hazard	:	Category 1

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements :

H226 Flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H314 Causes severe skin burns and eye damage.
H336 May cause drowsiness or dizziness.
H340 May cause genetic defects.
H350 May cause cancer.
H361d Suspected of damaging the unborn child.
H373 May cause damage to organs (Kidney, Liver, Central nervous system) through prolonged or repeated exposure.
H373 May cause damage to organs (Central nervous system) through prolonged or repeated exposure if inhaled.

Precautionary statements :

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.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P363 Wash contaminated clothing before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
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.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Chemical nature : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
Toluene	108-88-3	30 - 50
Solvent naphtha (petroleum), light aliph.	64742-89-8	30 - 50
Napthalenesulfonic acid, bis(1-methylethyl)-, Me derives	99811-86-6	5 - 10
Distillates (petroleum), catalytic reformer fractionator residue, low-boiling	68477-31-6	5 - 10
Alcohols, C11-14-iso-, C13-rich, ethoxylated	78330-21-9	5 - 10
Xylene	1330-20-7	1 - 5
Naphthalene	91-20-3	0.1 - 1
Sulphuric acid	7664-93-9	0.1 - 1
Ethylbenzene	100-41-4	0.1 - 1

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

If inhaled : Move the victim to fresh air.
Give oxygen or artificial respiration if needed.
Get immediate medical advice/ attention.
Never give anything by mouth to an unconscious person.

In case of skin contact	:	In case of contact, immediately wash with soap and water for at least 15 minutes. Remove contaminated clothing and shoes while washing. Isolate contaminated clothing for cleaning or disposal. Do not reuse unless thoroughly cleaned. Dispose of contaminated leatherwear. Get immediate medical attention.
In case of eye contact	:	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed	:	Get medical attention immediately. Do NOT induce vomiting.
Most important symptoms and effects, both acute and delayed	:	The possible symptoms known are those derived from the labelling (see section 2). No additional symptoms are known.
Notes to physician	:	Due to the corrosive nature of this material, swallowing may result in severe ulceration, inflammation, and possible perforation of the upper alimentary tract, with hemorrhage and fluid loss. Aspiration of this product during induced emesis can result in severe lung injury. Evacuation of stomach contents should be done by means least likely to cause aspiration, such as gastric lavage after endotracheal intubation. Contact a poison control center for additional treatment information.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Cool containers/tanks with water spray.
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during firefighting	:	In case of fire hazardous decomposition products may be produced such as: Carbon monoxide Carbon dioxide (CO2) Emits toxic and corrosive fumes under fire conditions. Containers exposed to intense heat from fires should be cooled with water to prevent vapor pressure buildup which could result in container rupture. Container areas exposed to direct flame contact should be cooled with large quantities of water as needed to prevent weakening of container structure.
Further information	:	Wear positive pressure self-contained breathing apparatus and full protective gear. Do not direct a solid stream of water or foam into hot burning pools; this may spread fire, cause

frothing, and increase fire intensity. Containers can build up pressure if exposed to heat and/or fire. Vapors may form an explosive mixture with air. Vapors may travel to source of ignition and flash back. Use water spray to keep containers cool.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Remove all spark producing devices or ignition sources. Wear proper personnel protective equipment. Using non-sparking tools collect as a liquid for recycling/disposal or absorb onto a suitable absorbant and secure in a suitable container. Collect any contaminated soils or cleaning waste in a suitable container for proper disposal.
Absorbent materials such as dry sand, absorbent booms, and vermiculite may be used to keep material from entering drains, sewers, or streams.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : Keep away from heat, sparks and open flames. - Avoid breathing vapors or contact with skin, eyes, and clothing.- Use only with adequate ventilation and proper protective eyewear, face shield, gloves and clothing. Wash thoroughly after handling. Keep container closed.
Prevent a possible fire hazard by bonding and grounding or inert gas purge.
Store in a cool, dry, well-ventilated, fire-resistant location.
Avoid storage on wood floors.

Further information on storage conditions : Store in a cool, dry location away from heat, sparks and open flames.
Store in original container.
Keep container tightly closed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Toluene	108-88-3	TWA	20 ppm	ACGIH
		TWA	100 ppm 375 mg/m3	NIOSH REL
		ST	150 ppm	NIOSH REL

			560 mg/m3	
		TWA	200 ppm	OSHA Z-2
		CEIL	300 ppm	OSHA Z-2
		Peak	500 ppm (10 minutes)	OSHA Z-2
		TWA	100 ppm 375 mg/m3	OSHA P0
		STEL	150 ppm 560 mg/m3	OSHA P0
Solvent naphtha (petroleum), light aliph.	64742-89-8	TWA	500 ppm 2,000 mg/m3	OSHA Z-1
		TWA	400 ppm 1,600 mg/m3	OSHA P0
Xylene	1330-20-7	STEL	150 ppm 655 mg/m3	OSHA P0
		TWA	100 ppm 435 mg/m3	OSHA P0
Naphthalene	91-20-3	TWA	10 ppm	ACGIH
		TWA	10 ppm 50 mg/m3	NIOSH REL
		ST	15 ppm 75 mg/m3	NIOSH REL
		TWA	10 ppm 50 mg/m3	OSHA Z-1
		TWA	10 ppm 50 mg/m3	OSHA P0
		STEL	15 ppm 75 mg/m3	OSHA P0
Sulphuric acid	7664-93-9	TWA (Thoracic particulate matter)	0.2 mg/m3	ACGIH
		TWA	1 mg/m3	NIOSH REL
		TWA	1 mg/m3	OSHA Z-1
		TWA	1 mg/m3	OSHA P0
Ethylbenzene	100-41-4	TWA	20 ppm	ACGIH
		TWA	100 ppm 435 mg/m3	NIOSH REL
		ST	125 ppm 545 mg/m3	NIOSH REL
		TWA	100 ppm 435 mg/m3	OSHA Z-1
		TWA	100 ppm 435 mg/m3	OSHA P0
		STEL	125 ppm 545 mg/m3	OSHA P0

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis

Ethylbenzene	100-41-4	Sum of mandelic acid and phenyl glyoxylic acid	Urine	End of shift (As soon as possible after exposure ceases)	0.15 g/g creatinine	ACGIH BEI
Toluene	108-88-3	Toluene	In blood	Prior to last shift of workweek	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
Xylene	1330-20-7	Methylhippuric acids	Urine	End of shift (As soon as possible after exposure ceases)	1.5 g/g creatinine	ACGIH BEI

Engineering measures : Local ventilation recommended - mechanical ventilation may be used.

Personal protective equipment

Respiratory protection : If airborne concentrations pose a health hazard, become irritating, or exceed recommended limits, use a NIOSH approved respirator in accordance with OSHA respiratory protection requirements under 29CFR1910.134.

Hand protection
Material : Silver Shield(R) gloves
Remarks : Viton® PVA gloves or gauntlets

Eye protection : Tightly fitting safety goggles
Face-shield

Skin and body protection : Wear suitable protective equipment.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Colour	:	dark brown
Odour	:	aromatic
Odour Threshold	:	no data available
pH	:	Not applicable
Melting point	:	< -40 °F / < -40 °C no data available
Boiling point	:	no data available
Flash point	:	73 - 140 °F / 23 - 60 °C
Evaporation rate	:	no data available
Self-ignition	:	no data available
Upper explosion limit / upper flammability limit	:	7 %(V)
Lower explosion limit / Lower flammability limit	:	1 %(V)
Vapour pressure	:	no data available
Relative vapour density	:	no data available
Density	:	0.81 - 0.85 g/cm3 (68 °F / 20 °C)
Solubility(ies)		
Water solubility	:	negligible
Partition coefficient: n-octanol/water	:	no data available
Decomposition temperature	:	no data available
Viscosity		
Viscosity, dynamic	:	< 10 mPa.s (77 °F / 25 °C)
Viscosity, kinematic	:	no data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable
Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use. Stable
Conditions to avoid	:	Keep away from heat. Keep away from open flames, hot surfaces and sources of ignition.
Incompatible materials	:	not known

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact
Skin contact
Inhalation
Ingestion
Skin Absorption

Acute toxicity

Product:

Acute oral toxicity	:	Acute toxicity estimate: > 5,000 mg/kg Method: Calculation method
Acute inhalation toxicity	:	Acute toxicity estimate: 59.41 mg/l Exposure time: 4 h Test atmosphere: vapour Method: Calculation method
Acute dermal toxicity	:	Acute toxicity estimate: > 5,000 mg/kg Method: Calculation method

Components:

Toluene:

Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg Symptoms: Vomiting, Stomach/intestinal disorders
Acute inhalation toxicity	:	(Rat): > 20 mg/l Exposure time: 4 h Target Organs: Lungs, Respiratory system, Liver, Kidney, Nervous system Symptoms: Lung oedema, Breathing difficulties, Vomiting, Pain, Dizziness

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

Napthalenesulfonic acid, bis(1-methylethyl)-, Me derives:

Acute oral toxicity : LD50 (Rat): > 300 - 2,000 mg/kg
Remarks: By analogy with a product of similar composition

Acute inhalation toxicity : Remarks: no data available

Acute dermal toxicity : Remarks: no data available

Distillates (petroleum), catalytic reformer fractionator residue, low-boiling:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg

Acute inhalation toxicity : Remarks: no data available

Acute dermal toxicity : Remarks: no data available

Xylene:

Acute oral toxicity : LD50 (Rat, male and female): 3523 - > 4000 mg/kg
Method: EC Directive 92/69/EEC B.1 Acute Toxicity (Oral)
GLP: no

Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat, male): 27.571 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: Directive 67/548/EEC, Annex V, B.2.
GLP: No information available.
Assessment: The component/mixture is moderately toxic after short term inhalation.

Acute dermal toxicity : Other (Rabbit, male): > 4,200 mg/kg
Method: Other
GLP: No information available.

Assessment: The component/mixture is moderately toxic after single contact with skin.

Naphthalene:

Acute oral toxicity : LD50 (Rat, male and female): 533 - 710 mg/kg
Method: OECD Test Guideline 401
GLP: No information available.

LD50 (Rat): 1,250 mg/kg

Acute inhalation toxicity : LC50 (Rat, male and female): > 0.4 mg/l
Exposure time: 4 h

Test atmosphere: dust/mist
Method: OECD Test Guideline 403
GLP: yes
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat, male and female): > 16,000 mg/kg
Method: OECD Test Guideline 402
GLP: no

Sulphuric acid:

Acute oral toxicity : LD50 (Rat, no data available): 2,140 mg/kg
Method: Other
GLP: no

Acute inhalation toxicity : LC50 (Rat, male and female): 0.375 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
GLP: no
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : Remarks: Not applicable

Ethylbenzene:

Acute oral toxicity : LD50 (Rat, male and female): ca. 3,500 mg/kg
Method: Other
GLP: no

Acute inhalation toxicity : Assessment: The component/mixture is moderately toxic after short term inhalation.

Skin corrosion/irritation

Components:

Toluene:

Species: Rabbit
Method: OECD Test Guideline 404
Result: Skin irritation

Napthalenesulfonic acid, bis(1-methylethyl)-, Me derives:

Assessment: Causes burns.

Distillates (petroleum), catalytic reformer fractionator residue, low-boiling:

Remarks: no data available

Xylene:

Species: Rabbit
Method: Other
Result: Irritating to skin.
GLP: No information available.

Naphthalene:

Species: Rabbit
Exposure time: 24 h
Method: 16CFR1500.41
Result: No skin irritation
GLP: no

Sulphuric acid:

Assessment: Causes severe burns.

Ethylbenzene:

Species: Rabbit
Method: Other
Result: slight irritation
GLP: no

Serious eye damage/eye irritation

Components:

Toluene:

Species: rabbit eye
Result: slight irritation
Assessment: No eye irritation
Method: OECD Test Guideline 405

Napthalenesulfonic acid, bis(1-methylethyl)-, Me derives:

Assessment: Risk of serious damage to eyes.

Distillates (petroleum), catalytic reformer fractionator residue, low-boiling:

Remarks: no data available

Alcohols, C11-14-iso-, C13-rich, ethoxylated:

Result: Risk of serious damage to eyes.

Xylene:

Species: rabbit eye
Result: Irritating to eyes.
Method: Other
GLP: No information available.

Naphthalene:

Species: Guinea pig
Result: No eye irritation
Exposure time: 24 h
Method: 16CFR1500.42
GLP: no

Sulphuric acid:

Assessment: Risk of serious damage to eyes.

Ethylbenzene:

Species: rabbit eye
Result: slight irritation
Method: Other
GLP: no

Respiratory or skin sensitisation

Components:

Toluene:

Exposure routes: Skin contact
Species: Rat
Result: Does not cause skin sensitisation.

Napthalenesulfonic acid, bis(1-methylethyl)-, Me derives:

Remarks: no data available

Distillates (petroleum), catalytic reformer fractionator residue, low-boiling:

Remarks: no data available

Alcohols, C11-14-iso-, C13-rich, ethoxylated:

Assessment: Causes serious eye damage.

Xylene:

Test Type: Local lymph node assay (LLNA)
Exposure routes: Skin contact
Species: Mouse
Method: OECD Test Guideline 429
Result: Not a skin sensitizer.
GLP: No information available.

Naphthalene:

Test Type: Maximisation Test
Exposure routes: Dermal
Species: Guinea pig
Method: OECD Test Guideline 406

Result: Not a skin sensitizer.
GLP: No information available.

Sulphuric acid:

Test Type: Skin
Exposure routes: Skin contact
Result: negative
Remarks: Not applicable

Test Type: Respiratory system
Exposure routes: Inhalation
Remarks: Not applicable

Assessment: Causes severe skin burns and eye damage.

Ethylbenzene:

Remarks: not required

Germ cell mutagenicity

Components:

Toluene:

Genotoxicity in vitro : Test Type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: Regulation (EC) No. 440/2008, Annex, B.13/14 (Ames test)
Result: negative

Test Type: gene mutation test
Test system: mouse lymphoma cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

Genotoxicity in vivo : Test Type: Cytogenetic assay
Species: Rat
Method: Other
Result: negative

Germ cell mutagenicity - Assessment : In vitro tests did not show mutagenic effects

In vivo tests did not show mutagenic effects

Napthalenesulfonic acid, bis(1-methylethyl)-, Me derives:

Germ cell mutagenicity - Assessment : No information available.

Distillates (petroleum), catalytic reformer fractionator residue, low-boiling:

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

Xylene:

Genotoxicity in vitro : Test Type: sister chromatid exchange assay
Test system: Chinese hamster ovary cells
Concentration: 5 - 50 µg/ml
Metabolic activation: with and without metabolic activation
Method: Other
Result: negative
GLP: No information available.

Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster ovary cells
Concentration: 15,1 - 100,5 µg/ml
Metabolic activation: with and without metabolic activation
Method: Directive 84/449/EEC, B.10
Result: negative
GLP: No information available.

Genotoxicity in vivo : Test Type: dominant lethal test
Species: Mouse (male and female)
Strain: Other
Application Route: Subcutaneous
Exposure time: single injection
Dose: 1 ml/kg
Method: OECD Test Guideline 478
Result: negative
GLP: no

Germ cell mutagenicity - Assessment : It is concluded that the product is not mutagenic based on evaluation of several mutagenicity tests.

Naphthalene:

Genotoxicity in vitro : Test Type: Other
Test system: human lymphoblastoid cells
Concentration: 40 µg/ml
Metabolic activation: without
Method: Other
Result: negative
GLP: No information available.

Test Type: Ames test
Test system: Salmonella typhimurium
Concentration: 0,3 - 100 µg/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

GLP: No information available.

Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster ovary cells
Concentration: 15 - 112,5 µg/ml
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: Positive only in the test with metabolic activation
GLP: yes

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse (male and female)
Strain: CD1
Cell type: Bone marrow cells
Application Route: Intraperitoneal injection
Exposure time: single treatment
Dose: 250-500-1000-3000-5000 mg/kg
Method: Other
Result: ambiguous
GLP: yes

Test Type: Micronucleus test
Species: Rat (male)
Strain: Sprague-Dawley
Cell type: Liver cells
Application Route: oral (gavage)
Exposure time: single treatment
Dose: 600-1000-1600 mg/kg
Method: OECD Test Guideline 486
Result: negative
GLP: yes

Germ cell mutagenicity - Assessment : It is concluded that the product is not mutagenic based on evaluation of several mutagenicity tests.

Sulphuric acid:

Genotoxicity in vitro : Test Type: Ames test
Test system: Salmonella typhimurium
Concentration: 20 - 12500 µg/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: yes
Remarks: By analogy with a product of similar composition

Germ cell mutagenicity - Assessment : Not mutagenic in Ames Test

Ethylbenzene:

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster ovary cells

Concentration: 75 - 125 µg/ml
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative
GLP: no

Test Type: In vitro gene mutation study in mammalian cells
Test system: mouse lymphoma cells
Concentration: 4,2 - 1060 µg/ml
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative
GLP: yes

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse (male and female)
Strain: NMRI
Cell type: Bone marrow
Application Route: oral (gavage)
Exposure time: 24 - 48 h
Dose: 187,5-375-750 mg/kg
Method: OECD Test Guideline 474
Result: negative
GLP: yes

Test Type: unscheduled DNA synthesis assay
Species: Mouse (male and female)
Strain: B6C3F1
Application Route: Inhalation
Exposure time: 6 h
Dose: 375-500-750-1000 ppm
Method: OECD Test Guideline 486
Result: negative
GLP: yes

Germ cell mutagenicity - Assessment : In vitro tests did not show mutagenic effects, In vivo tests did not show mutagenic effects

Carcinogenicity

Components:

Toluene:

Carcinogenicity - Assessment : Not classifiable as a human carcinogen.

Napthalenesulfonic acid, bis(1-methylethyl)-, Me derives:

Carcinogenicity - Assessment : No information available.

Distillates (petroleum), catalytic reformer fractionator residue, low-boiling:

Carcinogenicity - Assessment : Possible human carcinogen

Xylene:

Carcinogenicity - Assessment : Animal testing did not show any carcinogenic effects.

Naphthalene:

Carcinogenicity - Assessment : Limited evidence of a carcinogenic effect.

Sulphuric acid:

Species: Other
Application Route: Other
Method: Other
Result: positive

Carcinogenicity - Assessment : Not classifiable as a human carcinogen.

Ethylbenzene:

Carcinogenicity - Assessment : Not classifiable as a human carcinogen.

IARC	Group 2B: Possibly carcinogenic to humans	
	Sulphuric acid	7664-93-9
	Naphthalene	91-20-3
	Ethylbenzene	100-41-4
OSHA	Carcinogen	
	Sulphuric acid	7664-93-9
	Naphthalene	91-20-3
	Ethylbenzene	100-41-4
NTP	Reasonably anticipated to be a human carcinogen	
	Naphthalene	91-20-3

Reproductive toxicity

Components:

Toluene:

Reproductive toxicity - Assessment : Some evidence of adverse effects on development, based on animal experiments.

Napthalenesulfonic acid, bis(1-methylethyl)-, Me derives:

Reproductive toxicity - Assessment : No information available.
No information available.

Distillates (petroleum), catalytic reformer fractionator residue, low-boiling:

Reproductive toxicity - Assessment : No information available.
No information available.

Xylene:

Effects on fertility : Test Type: Two-generation study
Species: Rat, male and female
Application Route: Inhalation
Dose: 25 - 100 - 500 ppm
Duration of Single Treatment: 6 h
General Toxicity - Parent: NOAEL: >= 2.171 mg/l
General Toxicity F1: NOAEL: >= 2.171 mg/l
General Toxicity F2: NOAEL: >= 2.171 mg/l
Method: Other
GLP: No information available.
Remarks: By analogy with a product of similar composition

Effects on foetal development : Test Type: Two-generation study
Species: Rat
Application Route: Inhalation
Dose: 100 - 500 - 1000 ppm
Developmental Toxicity: NOAEL: 342 mg/kg body weight
Method: OPPTS 870.3800
GLP: No information available.
Remarks: Based on available data, the classification criteria are not met.

Reproductive toxicity - Assessment : Classification as "toxic for reproduction" is not justifiable.
Classification as "teratogenic" is not justifiable.

Naphthalene:

Effects on fertility : Test Type: Fertility/early embryonic development
Species: Rat, female
Strain: Sprague-Dawley
Application Route: oral (gavage)
Dose: 50 - 150 - 450 mg/kg
General Toxicity F1: NOAEL: 150 mg/kg body weight
Method: Other

GLP: yes

Test Type: Fertility
Species: Rat, male and female
Strain: Sprague-Dawley
Application Route: Inhalation
Dose: 11 - 52 - 304 mg/m3
Duration of Single Treatment: 6 h
Frequency of Treatment: 5 days/week
General Toxicity - Parent: NOAEL: 0.306 mg/kg body weight
Method: Other
GLP: yes

Effects on foetal development : Species: Rat
Strain: Sprague-Dawley
Application Route: oral (gavage)
Dose: 50 - 150 - 450 mg/kg
Teratogenicity: NOAEL: 150 mg/kg body weight
Method: OECD Test Guideline 414
GLP: yes

Reproductive toxicity - Assessment : No reproductive toxicity to be expected.
No teratogenic effects to be expected.

Sulphuric acid:

Effects on foetal development : Test Type: Pre-natal
Species: Mouse
Strain: CD1
Application Route: Inhalation
Dose: 5,7 - 19,3 mg/m3
Duration of Single Treatment: 9 d
General Toxicity Maternal: NOAEL: 0.019 mg/l
Method: OECD Test Guideline 414
GLP: no

Reproductive toxicity - Assessment : Not applicable
No teratogenic effects to be expected.

Ethylbenzene:

Effects on fertility : Test Type: Two-generation study
Species: Rat, male and female
Strain: Sprague-Dawley
Application Route: Inhalation
Dose: 25 - 100 - 500 ppm
Duration of Single Treatment: 6 h
General Toxicity - Parent: NOAEL: 2.21 mg/l
General Toxicity F1: NOAEL: 2.21 mg/l
General Toxicity F2: NOAEL: 2.21 mg/l
Method: OECD Test Guideline 416
GLP: yes

Effects on foetal development	:	Test Type: Fertility/early embryonic development Species: Rat Strain: Sprague-Dawley Application Route: Inhalation Dose: 100-500-1000-2000 ppm Duration of Single Treatment: 15 d General Toxicity Maternal: 500 Teratogenicity: 2,000 Developmental Toxicity: 500 Method: OECD Test Guideline 414 GLP: No information available.
Reproductive toxicity - Assessment	:	No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

STOT - single exposure

Components:

Toluene:

Assessment: May cause drowsiness or dizziness.

Napthalenesulfonic acid, bis(1-methylethyl)-, Me derives:

Remarks: no data available

Distillates (petroleum), catalytic reformer fractionator residue, low-boiling:

Remarks: no data available

Xylene:

Exposure routes: Inhalation
Assessment: May cause respiratory irritation.

Naphthalene:

Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure.

Sulphuric acid:

Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure.

Ethylbenzene:

Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT - repeated exposure

Components:

Toluene:

Assessment: May cause damage to organs through prolonged or repeated exposure.

Napthalenesulfonic acid, bis(1-methylethyl)-, Me derives:

Remarks: no data available

Distillates (petroleum), catalytic reformer fractionator residue, low-boiling:

Target Organs: Central nervous system
Assessment: May cause damage to organs through prolonged or repeated exposure.

Xylene:

Target Organs: Kidney, Liver, Central nervous system
Assessment: May cause damage to organs through prolonged or repeated exposure.

Naphthalene:

Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Sulphuric acid:

Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Ethylbenzene:

Target Organs: hearing organs
Assessment: May cause damage to organs through prolonged or repeated exposure.

Repeated dose toxicity

Components:

Toluene:

Target Organs: Liver, Nervous system
Assessment: The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.
Remarks: no data available

Alcohols, C11-14-iso-, C13-rich, ethoxylated:

Repeated dose toxicity - Assessment : Causes serious eye damage.

Xylene:

Species: Rat, male and female
NOAEL: 250 mg/kg

Application Route: oral (gavage)
Exposure time: 103 w
Number of exposures: Once daily (5 days/week).
Dose: 250 - 500 mg/kg
Group: yes
Method: Other
GLP: No information available.

Species: Rat, male and female
NOAEL: 150 mg/kg
LOAEL: 150 mg/kg
Application Route: oral (gavage)
Exposure time: 90 d
Number of exposures: once daily
Dose: 150 - 750 - 1500 mg/kg
Group: yes
Method: OECD Test Guideline 408
GLP: No information available.

Species: Rat, male
NOAEL: >= 3.515 mg/l
Application Route: Inhalation
Exposure time: 13 w
Number of exposures: 6 hours/day, 5 days/week
Dose: 781 - 1996 - 3515 mg/m3
Group: yes
Method: Other
GLP: No information available.

Application Route: Skin contact
Remarks: This information is not available.

Naphthalene:

Species: Rat, male and female
NOAEL: 100 mg/kg
Application Route: oral (gavage)
Exposure time: 13 w
Number of exposures: daily, 5 d per w
Dose: 25 - 50 - 100 - 200 - 400 mg/k
Group: yes
Method: OECD Test Guideline 408
GLP: no

Species: Rat, male and female
LOAEL: 0.011 mg/l
Application Route: Inhalation
Exposure time: 13 w
Number of exposures: 6 h/d, 5d per w
Dose: 11 -51 - 306 mg/m3
Group: yes
Method: OECD Test Guideline 413

GLP: yes

Species: Rat, male and female
NOAEL: 1,000 mg/kg
Application Route: Skin contact
Exposure time: 13 w
Number of exposures: 5 d per week
Dose: 100 - 300 - 1000 mg/kg
Group: yes
Method: OECD Test Guideline 411
GLP: yes

Sulphuric acid:

Species: Rat, female
NOAEL: 0,3 mg/m³
LOAEL: 0,3 mg/m³
Application Route: Inhalation
Exposure time: 5 - 28 d
Number of exposures: 6 hours/day, 5 days/week
Dose: 0,3 - 1,38 - 5,52 mg/m3
Group: yes
Method: OECD Test Guideline 412
GLP: yes

Application Route: Oral
Remarks: The study is not necessary from a scientific perspective.

Application Route: Skin contact
Remarks: The study is not necessary from a scientific perspective.

Repeated dose toxicity - Assessment : Causes severe skin burns and eye damage.

Ethylbenzene:

Species: Rat, male and female
NOAEL: 75 mg/kg
Application Route: oral (gavage)
Exposure time: 3 m
Number of exposures: twice daily
Dose: 75 - 250 - 750 mg/kg
Group: yes
Method: OECD Test Guideline 408
GLP: yes

Species: Rat, male and female
NOAEL: 0.33 - 1.1 mg/l
Application Route: Inhalation
Exposure time: 2 a
Number of exposures: 6 hours/day, 5 days/week
Dose: 75 - 250 - 750 ppm
Group: yes

Method: OECD Test Guideline 453
GLP: yes

Application Route: Skin contact
Remarks: This information is not available.

Aspiration toxicity

Components:

Toluene:
May be fatal if swallowed and enters airways.

Napthalenesulfonic acid, bis(1-methylethyl)-, Me derives:
no data available

Distillates (petroleum), catalytic reformer fractionator residue, low-boiling:
May be fatal if swallowed and enters airways.

Xylene:
May be fatal if swallowed and enters airways.

Naphthalene:
No aspiration toxicity classification

Sulphuric acid:
No aspiration toxicity classification

Ethylbenzene:
May be fatal if swallowed and enters airways.

Further information

Components:

Toluene:
Remarks: Inhalation of vapours is irritating to the respiratory system, may cause throat pain and cough.
Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.
Ingestion or inhalation of high concentrations may cause injuries to gastrointestinal tract, liver, kidneys and central nervous system.
Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.
Poisoning by resorption through skin possible.
Has a degreasing effect on the skin.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Toluene:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 5.5 mg/l Exposure time: 96 h Test Type: flow-through test
Toxicity to daphnia and other aquatic invertebrates	:	LC50 (Ceriodaphnia dubia (water flea)): 3.78 mg/l Exposure time: 48 h Test Type: semi-static test Method: EPA
Toxicity to algae/aquatic plants	:	EC50 (Chlorella vulgaris (Fresh water algae)): 134 mg/l Exposure time: 3 h Test Type: static test Method: Other
Toxicity to fish (Chronic toxicity)	:	NOEC (Oncorhynchus kisutch (coho salmon)): 1.39 mg/l Exposure time: 40 d Test Type: flow-through test
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Ceriodaphnia spec.): 0.74 mg/l End point: Reproduction rate Exposure time: 7 d Test Type: semi-static test Method: Other
Toxicity to microorganisms	:	NOEC (Pseudomonas putida): 29 mg/l Exposure time: 16 h
Toxicity to soil dwelling organisms	:	Remarks: Not applicable
Plant toxicity	:	Remarks: Not applicable
Sediment toxicity	:	Remarks: Not applicable
Toxicity to terrestrial organisms	:	Remarks: Not applicable

Napthalenesulfonic acid, bis(1-methylethyl)-, Me derives:

Toxicity to fish	:	Remarks: no data available
Toxicity to daphnia and other aquatic invertebrates	:	Remarks: no data available
Toxicity to algae/aquatic plants	:	Remarks: no data available

Toxicity to fish (Chronic toxicity)	:	Remarks: no data available
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	Remarks: no data available

Distillates (petroleum), catalytic reformer fractionator residue, low-boiling:

Toxicity to fish	:	Remarks: no data available
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 1 - 10 mg/l Exposure time: 48 h Remarks: By analogy with a product of similar composition
Toxicity to algae/aquatic plants	:	Remarks: no data available
Toxicity to fish (Chronic toxicity)	:	Remarks: no data available
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	Remarks: no data available

Alcohols, C11-14-iso-, C13-rich, ethoxylated:

Ecotoxicology Assessment

Acute aquatic toxicity	:	Toxic to aquatic life.
Chronic aquatic toxicity	:	Harmful to aquatic life with long lasting effects.

Xylene:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 2.6 mg/l Exposure time: 96 h Test Type: semi-static test Analytical monitoring: yes Method: OECD Test Guideline 203 GLP: No information available. Remarks: By analogy with a product of similar composition
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): ca. 1 mg/l Exposure time: 24 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 202 GLP: No information available. Remarks: By analogy with a product of similar composition
Toxicity to algae/aquatic	:	EC50 (Pseudokirchneriella subcapitata (microalgae)): 4.36

plants		mg/l End point: Growth rate Exposure time: 73 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 201 GLP: yes Remarks: By analogy with a product of similar composition EC50 (Pseudokirchneriella subcapitata (green algae)): 2.2 mg/l End point: Biomass Exposure time: 73 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 201 GLP: yes Remarks: By analogy with a product of similar composition NOEC (Pseudokirchneriella subcapitata (green algae)): 0.44 mg/l Exposure time: 73 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 201 GLP: yes Remarks: By analogy with a product of similar composition
Toxicity to fish (Chronic toxicity)	:	NOEC (Oncorhynchus mykiss (rainbow trout)): > 1.3 mg/l Exposure time: 56 d Test Type: flow-through test Analytical monitoring: yes Method: Other GLP: no
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Freshwater insects): 0.96 - 1.17 mg/l End point: Reproduction rate Exposure time: 7 d Test Type: semi-static test Analytical monitoring: yes Method: Other GLP: no Remarks: By analogy with a product of similar composition
Toxicity to microorganisms	:	EC50 (Nitrosomonas sp.): 96 mg/l Exposure time: 24 h Test Type: static test Analytical monitoring: no Method: Other GLP: No information available. Remarks: By analogy with a product of similar composition The details of the toxic effect relate to the nominal

concentration.

EC50 (activated sludge, domestic): > 157 mg/l
End point: Bacteria toxicity (respiration inhibition)
Exposure time: 3 h
Test Type: static test
Analytical monitoring: no
Method: OECD Test Guideline 209
GLP: yes
Remarks: By analogy with a product of similar composition
The details of the toxic effect relate to the nominal concentration.

Toxicity to soil dwelling organisms : Remarks: Not applicable

Plant toxicity : EC50: ca. > 1 mg/kg
>1 milligram per kilogram
Exposure time: 14 d
End point: Growth
Species: Lactuca sativa (lettuce)
Analytical monitoring: yes
Method: OECD Guide-line 208
GLP: No information available.
Remarks: By analogy with a product of similar composition

Sediment toxicity : Remarks: Not applicable

Toxicity to terrestrial organisms : Remarks: Not applicable

Ecotoxicology Assessment

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

Naphthalene:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1.6 mg/l
Exposure time: 96 h
Test Type: flow-through test
Analytical monitoring: yes
Method: OECD Test Guideline 203
GLP: No information available.

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 2.16 mg/l
Exposure time: 48 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 202
GLP: no
Remarks: The details of the toxic effect relate to the nominal concentration.

Toxicity to algae/aquatic plants	:	NOEC (Lemna gibba G3 (gibbous duckweed)): >= 16 mg/l End point: Growth rate Exposure time: 8 d Test Type: static test Analytical monitoring: yes Method: Other GLP: No information available.
Toxicity to fish (Chronic toxicity)	:	NOEC (Oncorhynchus kisutch (coho salmon)): ca. 0.37 mg/l End point: weight of young fish Exposure time: 40 d Test Type: flow-through test Analytical monitoring: yes Method: Other GLP: No information available.
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia pulex (Water flea)): 0.59 mg/l End point: Reproduction rate Exposure time: 125 d Test Type: static test Analytical monitoring: yes Method: Other GLP: No information available.
Toxicity to microorganisms	:	IC50 (Nitrosomonas sp.): 29 mg/l End point: Growth rate Exposure time: 24 h Test Type: aquatic Analytical monitoring: no data available Method: Other GLP: No information available. Remarks: The details of the toxic effect relate to the nominal concentration.
Sediment toxicity	:	Remarks: Not applicable

Sulphuric acid:

Toxicity to fish	:	LC50 (Lepomis macrochirus (Bluegill sunfish)): 16 - 28 mg/l End point: mortality Exposure time: 96 h Test Type: static test Analytical monitoring: yes Method: Other GLP: no
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l End point: Immobilization Exposure time: 48 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 202

GLP: yes

Toxicity to algae/aquatic plants : ErC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l
End point: Growth rate
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes

Toxicity to fish (Chronic toxicity) : NOEC (Salvelinus fontinalis (Brook trout)): 0.31 mg/l
Exposure time: 45 d
Test Type: flow-through test
Analytical monitoring: yes
Method: Other
GLP: no

NOEC (Jordanella floridae (flagfish)): 0.025 mg/l
Exposure time: 65 d
Test Type: flow-through test
Analytical monitoring: yes
Method: Other
GLP: no

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (other aquatic arthropod): 0.15 mg/l
End point: mortality
Test Type: static test
Analytical monitoring: yes
Method: Other
GLP: No information available.

Toxicity to microorganisms : NOEC (activated sludge, domestic): 26,000 mg/l
End point: Bacteria toxicity (respiration inhibition)
Exposure time: 37 d
Test Type: aquatic
Analytical monitoring: no data available
Method: Other
GLP: no
Remarks: By analogy with a product of similar composition

Ecotoxicology Assessment

Acute aquatic toxicity : This product has no known ecotoxicological effects.

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

Ethylbenzene:

Toxicity to fish : LC50 (Menidia menidia (Atlantic silverside)): 5.1 mg/l
Exposure time: 96 h
Test Type: flow-through test
Analytical monitoring: yes
Method: Other

GLP: yes

LC50 (Oncorhynchus mykiss (rainbow trout)): 4.2 mg/l
Exposure time: 96 h
Test Type: flow-through test
Analytical monitoring: yes
Method: OECD Test Guideline 203
GLP: No information available.

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1.8 - 2.4 mg/l
Exposure time: 48 h
Test Type: static test
Analytical monitoring: yes
Method: EPA
GLP: no

LC50 (Mysidopsis bahia (opossum shrimp)): 2.6 mg/l
Exposure time: 96 h
Test Type: flow-through test
Analytical monitoring: yes
Method: EPA
GLP: yes

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (microalgae)): 3.6 mg/l
End point: Biomass
Exposure time: 96 h
Test Type: static test
Analytical monitoring: yes
Method: EPA
GLP: yes

EC50 (Skeletonema costatum (marine diatom)): 7.7 mg/l
End point: Biomass
Exposure time: 96 h
Test Type: static test
Analytical monitoring: yes
Method: EPA
GLP: yes

Toxicity to fish (Chronic toxicity) : Chronic Toxicity Value (Fish): 1.13 mg/l
Exposure time: 30 d
Analytical monitoring: no
Method: Expert judgement
GLP: no

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Ceriodaphnia spec.): 0.96 mg/l
End point: Reproduction rate
Exposure time: 7 d
Test Type: semi-static test
Analytical monitoring: yes
Method: Other
GLP: no

Toxicity to microorganisms	:	EC50 (Nitrosomonas sp.): 96 mg/l Exposure time: 24 h Test Type: static test Analytical monitoring: no Method: Other GLP: no Remarks: The details of the toxic effect relate to the nominal concentration.
Toxicity to soil dwelling organisms	:	LC50 (Eisenia fetida (earthworms)): 0.047 mg/cm2 Exposure time: 48 h End point: mortality Method: OECD Test Guideline 207 GLP: no
Plant toxicity	:	Remarks: Not applicable
Sediment toxicity	:	Remarks: Not applicable
Toxicity to terrestrial organisms	:	Remarks: Not applicable

Ecotoxicology Assessment

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

Persistence and degradability

Components:

Toluene:

Biodegradability	:	aerobic Result: Readily biodegradable. Biodegradation: 86 % Exposure time: 20 d
Physico-chemical removability	:	Remarks: Biodegradable

Napthalenesulfonic acid, bis(1-methylethyl)-, Me derives:

Biodegradability	:	Result: Not readily biodegradable. Remarks: By analogy with a product of similar composition

Distillates (petroleum), catalytic reformer fractionator residue, low-boiling:

Biodegradability	:	Result: Not readily biodegradable.

Xylene:

Biodegradability	:	aerobic Inoculum: activated sludge, non-adapted

Concentration: 41 mg/l
BOD in % of theoretical OD
Result: Readily biodegradable.
Biodegradation: 87.8 %
Exposure time: 28 d
Method: OECD Test Guideline 301F
GLP: yes

Naphthalene:

Biodegradability : aerobic
Inoculum: activated sludge, non-adapted
Concentration: 30 ppm
BOD in % of theoretical OD
Result: Not biodegradable
Biodegradation: ca. 0 %
Exposure time: 28 d
Method: OECD Test Guideline 302C
GLP: no

aerobic
Inoculum: other bacteria
Concentration: 0.15 mg/l
BOD in % of theoretical OD
Result: Readily biodegradable.
Biodegradation: 99.9 %
Exposure time: 15 d
Method: Other
GLP: No information available.

Physico-chemical removability : Remarks: Biodegradable

Sulphuric acid:

Biodegradability : Remarks: Not applicable

Photodegradation : Remarks: Not applicable

Ethylbenzene:

Biodegradability : aerobic
Inoculum: activated sludge
Concentration: 22 mg/l
Dissolved organic carbon (DOC)
Result: Readily biodegradable.
Biodegradation: 70 - 80 %
Exposure time: 28 d
Method: ISO/DIS 14853
GLP: yes

Photodegradation : Test Type: air
Concentration: 500000 molecule/cm³

Rate constant: 7,1E-12 cm^3/(molecule*sec)
Degradation (indirect photolysis): 50 % Degradation half life: 2.3 d
GLP: No information available.

Bioaccumulative potential

Components:

Toluene:

Bioaccumulation : Bioconcentration factor (BCF): 90
Remarks: Does not bioaccumulate.

Napthalenesulfonic acid, bis(1-methylethyl)-, Me derives:

Bioaccumulation : Remarks: no data available

Distillates (petroleum), catalytic reformer fractionator residue, low-boiling:

Bioaccumulation : Remarks: no data available

Xylene:

Bioaccumulation : Species: Oncorhynchus mykiss (rainbow trout)
Bioconcentration factor (BCF): 7.2 - 25.9
Exposure time: 56 d
Concentration: 0.36 - 0.74 mg/l
Method: Other
GLP: No information available.

Naphthalene:

Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 36.5 - 168
Exposure time: 56 d
Concentration: 0.15 mg/l
Method: OECD Test Guideline 305
GLP: no
Remarks: Does not significantly accumulate in organisms.

Ethylbenzene:

Bioaccumulation : Species: Oncorhynchus kisutch (coho salmon)
Bioconcentration factor (BCF): 1
Exposure time: 42 d
Concentration: 0.005 mg/l
Method: Other
GLP: No information available.

Mobility in soil

Components:

Toluene:

Distribution among environmental compartments	:	Remarks: The product evaporates readily.

Xylene:

Distribution among environmental compartments	:	Adsorption/Soil Medium: water - soil log Koc: 2.73 Method: OECD Test Guideline 121

Naphthalene:

Distribution among environmental compartments	:	Adsorption/Soil Medium: water - soil Koc: ca. 664 Method: Other

Sulphuric acid:

Distribution among environmental compartments	:	Remarks: Not applicable

Ethylbenzene:

Distribution among environmental compartments	:	Adsorption/Soil log Koc: 2.71 Method: estimated

Other adverse effects

Components:

Toluene:

Results of PBT and vPvB assessment	:	This substance is not considered to be persistent, bioaccumulating and toxic (PBT).
Additional ecological information	:	The product should not be allowed to enter drains, water courses or the soil.

Xylene:

Environmental fate and pathways	:	not available
Results of PBT and vPvB assessment	:	The substance is not identified as a PBT or as a vPvB substance.
Additional ecological information	:	Do not allow to enter ground water, waterways or waste water.

Naphthalene:

Environmental fate and pathways	:	not available

Results of PBT and vPvB assessment	:	The substance is not identified as a PBT or as a vPvB substance.
Additional ecological information	:	Do not allow to enter ground water, waterways or waste water.

Sulphuric acid:

Environmental fate and pathways	:	not available
Results of PBT and vPvB assessment	:	Remarks: Not applicable
Additional ecological information	:	Do not allow to enter ground water, waterways or waste water. Damaging effect on aquatic ecosystems possible due to change in the pH value.

Ethylbenzene:

Environmental fate and pathways	:	not available
Results of PBT and vPvB assessment	:	The substance is not identified as a PBT or as a vPvB substance.
Additional ecological information	:	The product should not be allowed to enter drains, water courses or the soil.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities.

SECTION 14. TRANSPORT INFORMATION

DOT Regulation:

UN/NA-number:	UN 1993
Proper shipping name:	Flammable liquids, n.o.s.
Technical Name:	TOLUENE Solvent Naphtha
Primary hazard class:	3
Packing group:	III

Reportable Quantity: 1,031.000 kg TOLUENE

Emergency Response Guide: 128

IATA

UN/ID number: UN 1993
Proper shipping name: Flammable liquid, n.o.s.
Hazard inducer(s): TOLUENE
Solvent Naphtha

Primary risk: 3
Packing group: III
Remarks: Shipment permitted

IMDG

UN no.: UN 1993
Proper shipping name: Flammable liquid, n.o.s.
Hazard inducer(s): TOLUENE
Solvent Naphtha

Primary risk: 3
Packing group: III
EmS: F-E S-E

SECTION 15. REGULATORY INFORMATION

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	2272

SARA 304 Extremely Hazardous Substances Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Sulphuric acid	7664-93-9	1000	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)
Germ cell mutagenicity
Carcinogenicity
Reproductive toxicity
Specific target organ toxicity (single or repeated exposure)
Aspiration hazard
Skin corrosion or irritation
Serious eye damage or eye irritation

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

Toluene	108-88-3	30 - 50 %
Xylene	1330-20-7	1 - 5 %
Naphthalene	91-20-3	0.1 - 1 %
Ethylbenzene	100-41-4	0.1 - 1 %

Clean Water Act

Contains priority pollutants toluene and ethylbenzene at greater than 0.1%., Contains priority pollutant naphthalene at concentrations greater than 0.1%., This product is an oil in the context of the USA Clean Water Act (CWA). Spills to USA surface waters, or to watercourse or sewer waters that cause a visible sheen must be reported to the National Response Center.

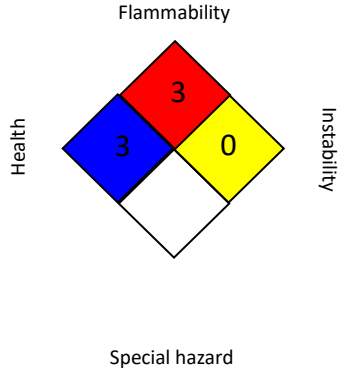
The components of this product are reported in the following inventories:

TSCA : On TSCA Inventory, All components are compliant with the TSCA Inventory Notification (Active) rule.

SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	:	ACGIH - Biological Exposure Indices (BEI)
NIOSH REL	:	USA. NIOSH Recommended Exposure Limits
OSHA P0	:	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants

OSHA Z-2	:	USA. Occupational Exposure Limits (OSHA) - Table Z-2
ACGIH / TWA	:	8-hour, time-weighted average
NIOSH REL / TWA	:	Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / ST	:	STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
OSHA P0 / TWA	:	8-hour time weighted average
OSHA P0 / STEL	:	Short-term exposure limit
OSHA Z-1 / TWA	:	8-hour time weighted average
OSHA Z-2 / TWA	:	8-hour time weighted average
OSHA Z-2 / CEIL	:	Acceptable ceiling concentration
OSHA Z-2 / Peak	:	Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Observe all necessary precautions for handling flammable substances. Keep away from sources of heat and ignition. Smoking should be prohibited where material is being handled. Electrical grounding of equipment is required.

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