SAFETY DATA SHEET

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier **MEDIUM URETHANE REDUCER**

Other means of identification

Product code **FS 5655-53**

Recommended use Solvent

Manufacturer/Importer/Supplier/Distributor information

Company name INTERNATIONAL AUTOBODY MARKETING GROUP

Address 1505 NORTH HAYDEN RD, SUITE 111
SCOTTSDALE, AZ 85257
UNITED STATES

Website www.5starxtreme.com

Telephone 1-87-REFINISH
480.451.4451

Emergency phone number 800-424-9300 ChemTrec EMERGENCY 24 Hrs.

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids	: Category 2
Skin irritation	: Category 2
Eye irritation	: Category 2A
Germ cell mutagenicity	: Category 1B
Carcinogenicity	: Category 2
Reproductive toxicity	: Category 2
Specific target organ toxicity - single exposure	: Category 3 (Central nervous system)
Specific target organ toxicity - repeated exposure	: Category 2 (Liver, Kidney, Central nervous system, Auditory system)
Specific target organ toxicity - repeated exposure (Inhalation)	: Category 2 (Auditory system, Eyes)

Aspiration hazard	:	Category 1

GHS Label element

Hazard pictograms :

Signal word	:	Danger
Hazard statements	:	H225 Highly flammable liquid and vapour. H304 May be fatal if swallowed and enters airways. H315 Causes skin irritation. H319 Causes serious eye irritation. H336 May cause drowsiness or dizziness. H340 May cause genetic defects. H351 Suspected of causing cancer. H361 Suspected of damaging fertility or the unborn child. H373 May cause damage to organs (Liver, Kidney, Central nervous system, Auditory system) through prolonged or repeated exposure. H373 May cause damage to organs (Auditory system, Eyes) 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, hot surfaces, sparks, open flames and other ignition sources. 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/ eye protection/ face protection. P281 Use personal protective equipment as required. **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.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P331 Do NOT induce vomiting.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

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.

Potential Health Effects

Carcinogenicity:

IARC	Group 2B: Possibly carcinogenic to humans	
	64742-49-0	Naphtha (pet), hydrotreated lt
	64742-89-8	Solvent naphtha (pet), lt aliph.
	100-41-4	Ethylbenzene
ACGIH	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.	
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 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	clear
Hazard Summary	No information available.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

CAS-No.	Chemical Name	Concentration (%)
67-64-1	Acetone	30 - 50
64742-49-0	Naphtha (pet), hydrotreated lt	0 - 20
64742-89-8	Solvent naphtha (pet), lt aliph.	0 - 20
68410-97-9	Distillates, pet, lt dist hydrotreat process, low-boil	0 - 20
108-65-6	Glycol ether PM acetate	10 - 20
108-88-3	Toluene	10 - 20
110-19-0	Isobutyl acetate	10 - 20
123-86-4	n-Butyl acetate	5 - 10
1330-20-7	Mixed xylenes	5 - 10
100-41-4	Ethylbenzene	1 - 5
142-82-5	Heptane	0.1 - 1

Synonyms : CP 81-03,

Special Notes: : Functionally equivalent petroleum streams may be found in this preparation at varying concentrations. Mixed Xylenes contains the isomers o-, m-, p- Xylene, and Ethylbenzene. Trace amounts of Toluene and Benzene may also be present as impurities.

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. Do not leave the victim unattended.
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	:	Immediately flush eye(s) with plenty of water. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
If swallowed	:	Keep respiratory tract clear. Do NOT induce vomiting. 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.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Alcohol-resistant foam Carbon dioxide (CO2) 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 fire-fighting if necessary.

NFPA Flammable and Combustible Liquids Classification:
Flammable Liquid Class IB

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Ensure adequate ventilation. 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. Container may be opened only under exhaust ventilation hood. 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

CAS-No.	Components	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
67-64-1	Acetone	TWA	500 ppm	ACGIH
		STEL	750 ppm	ACGIH
		TWA	250 ppm 590 mg/m3	NIOSH REL
		TWA	1,000 ppm 2,400 mg/m3	OSHA Z-1
		TWA	750 ppm 1,800 mg/m3	OSHA P0
		STEL	1,000 ppm 2,400 mg/m3	OSHA P0
64742-49-0	Naphtha (pet), hydrotreated lt	TWA	500 ppm 2,000 mg/m3	OSHA Z-1
		TWA	400 ppm 1,600 mg/m3	OSHA P0
64742-89-8	Solvent naphtha (pet), lt aliph.	TWA	500 ppm 2,000 mg/m3	OSHA Z-1
		TWA	400 ppm 1,600 mg/m3	OSHA P0
108-65-6	Glycol ether PM acetate	TWA	50 ppm	US WEEL
108-88-3	Toluene	TWA	20 ppm	ACGIH
		TWA	100 ppm 375 mg/m3	NIOSH REL
		ST	150 ppm 560 mg/m3	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/m3	OSHA P0
		STEL	150 ppm 560 mg/m3	OSHA P0
110-19-0	Isobutyl acetate	TWA	150 ppm	ACGIH
		TWA	150 ppm 700 mg/m3	NIOSH REL
		TWA	150 ppm 700 mg/m3	OSHA Z-1
		TWA	150 ppm 700 mg/m3	OSHA P0
123-86-4	n-Butyl acetate	TWA	150 ppm	ACGIH
		STEL	200 ppm	ACGIH
		ST	200 ppm 950 mg/m3	NIOSH REL
		TWA	150 ppm 710 mg/m3	NIOSH REL
		TWA	150 ppm 710 mg/m3	OSHA Z-1
		TWA	150 ppm 710 mg/m3	OSHA P0
		STEL	200 ppm 950 mg/m3	OSHA P0
1330-20-7	Mixed xylenes	TWA	100 ppm	ACGIH
		STEL	150 ppm	ACGIH
		TWA	100 ppm 435 mg/m3	OSHA Z-1
100-41-4	Ethylbenzene	TWA	20 ppm	ACGIH
		STEL	125 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
142-82-5	Heptane	TWA	85 ppm 350 mg/m3	NIOSH REL
		C	440 ppm 1,800 mg/m3	NIOSH REL
		TWA	500 ppm 2,000 mg/m3	OSHA Z-1
		TWA	400 ppm 1,600 mg/m3	OSHA P0
		STEL	500 ppm 2,000 mg/m3	OSHA P0

Biological occupational exposure limits

Components	CAS-No.	Control parame-ters	Biological specimen	Sam-pling time	Permissi-ble con-centration	Basis
Acetone	67-64-1	Acetone	Urine	End of shift (As soon as possible after expo-sure ceases)	50 mg/l	ACGIH BEI
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 expo-sure ceases)	0.03 mg/l	ACGIH BEI
		o-Cresol	Urine	End of shift (As soon as possible after expo-sure ceases)	0.3 mg/g Creatinine	ACGIH BEI
Ethylbenzene	100-41-4	Sum of mandelic acid and phenyl glyoxylic acid	Urine	End of shift at end of work-week	0.7 g/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 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 Wear face-shield and protective suit for abnormal processing problems.
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
Odour	:	No data available
Odour Threshold	:	No data available
pH	:	No data available
Freezing Point	:	No data available
Boiling Point (Boiling point/boiling range)	:	56 - 245 °C (133 - 473 °F)
Flash point	:	< -18 °C (-0.40 °F)
Evaporation rate	:	1 Ethyl Ether
Flammability (solid, gas)	:	No data available
Burning rate	:	No data available
Upper explosion limit	:	12.8 %(V) Calculated Explosive Limit
Lower explosion limit	:	1 %(V) Calculated Explosive Limit

Vapour pressure	:	No data available
Relative vapour density	:	> 1(Air = 1.0)
Relative density	:	0.827 @ 77.00 °F (77.00 °F)
Density	:	0.827 g/cm3 @ 25 °C (77 °F)
Bulk density	:	No data available
Water solubility	:	No data available
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
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	:	Product will not undergo hazardous polymerization. Vapours may form explosive mixture with air.
Conditions to avoid	:	Heat, flames and sparks. Exposure to air. Exposure to moisture. Extremes of temperature and direct sunlight.
Incompatible materials	:	Acids alkalis Amines Ammonia halogens Peroxides Reducing agents Strong oxidizing agents Oxygen aluminum

nitrates
organic absorbents such as sawdust, peat moss, ground corn cobs, etc.
Bases
metal salts

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity	:	Acute toxicity estimate : > 5,000 mg/kg Method: Calculation method
Acute inhalation toxicity	:	Acute toxicity estimate : > 30000 ppm Exposure time: 4 h Test atmosphere: gas Method: Calculation method
Acute dermal toxicity	:	Acute toxicity estimate : > 5,000 mg/kg Method: Calculation method

Components:

67-64-1:

Acute oral toxicity	:	LD50 (rat): 5,800 mg/kg
Acute inhalation toxicity	:	LC50 (rat): 76.0 mg/l Exposure time: 4 h
Acute dermal toxicity	:	LD50 : > 7,426 mg/kg

64742-49-0:

Acute oral toxicity	:	LD50 (rat, male and female): > 5,000 mg/kg Method: OECD Test Guideline 401 GLP: yes
Acute inhalation toxicity	:	Remarks: No data available
Acute dermal toxicity	:	LD50 (rabbit, male and female): > 2,000 mg/kg Method: OECD Test Guideline 402 GLP: yes

64742-89-8:

Acute oral toxicity	:	LD50 (rat, male and female): > 5,000 mg/kg Method: OECD Test Guideline 401 GLP: yes

Acute inhalation toxicity	:	Remarks: No data available
Acute dermal toxicity	:	LD50 (rabbit, male and female): > 2,000 mg/kg Method: OECD Test Guideline 402 GLP: yes

68410-97-9:

Acute oral toxicity	:	LD50 (rat): > 5,000 mg/kg
Acute inhalation toxicity	:	Remarks: No data available
Acute dermal toxicity	:	LD50 (rabbit): > 2,000 mg/kg

108-65-6:

Acute oral toxicity	:	LD50 (rat): 8,532 mg/kg
Acute inhalation toxicity	:	Remarks: No data available
Acute dermal toxicity	:	LD50 (rabbit): > 5,000 mg/kg Method: OECD Test Guideline 402

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

110-19-0:

Acute oral toxicity	:	LD50 (rat): 13,413 mg/kg Assessment: The substance or mixture has no acute oral toxicity
Acute inhalation toxicity	:	LC50 (rat): 23.4 mg/l Exposure time: 4 h Assessment: The substance or mixture has no acute inhalation toxicity Remarks: Information given is based on data obtained from similar substances.
Acute dermal toxicity	:	LD50 (rabbit): > 17,400 mg/kg Assessment: The substance or mixture has no acute dermal toxicity

123-86-4:

Acute oral toxicity	:	LD50 (rat): > 5,000 mg/kg

Method: OECD Test Guideline 423
GLP: no

Acute inhalation toxicity : LC50 (rat, male and female): > 21 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: OECD Test Guideline 403
GLP: yes

Acute dermal toxicity : LD50 (rabbit, male and female): > 5,000 mg/kg
Method: OECD Test Guideline 402
GLP: yes

1330-20-7:
Acute oral toxicity : LD50 (rat, male): 3,523 mg/kg
Method: EU Method B.1 (Acute Toxicity, Oral)
GLP: no

Acute inhalation toxicity : LC50 (rat, male): 6700 ppm
Exposure time: 4 h
Method: Directive 67/548/EEC, Annex V, B.2.
Assessment: The component/mixture is moderately toxic after short term inhalation.

Acute dermal toxicity : LD50 (rabbit): 1,100 mg/kg
Assessment: The component/mixture is moderately toxic after single contact with skin.

100-41-4:
Acute inhalation toxicity : LC50 (Mouse, Male): 10 mg/l
Exposure time: 4 h
Assessment: The component/mixture is moderately toxic after short term inhalation.

Acute dermal toxicity : LD50 (rabbit): 15,433 mg/kg

142-82-5:
Acute oral toxicity : LD50 (rat, male and female): 5,000 mg/kg
Method: OECD Test Guideline 401
Symptoms: Salivation
GLP: yes
Remarks: Information given is based on data obtained from similar substances.

Acute inhalation toxicity : LC50 (rat, male and female): 73.5 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (rabbit, male and female): > 2,000 mg/kg

Method: OECD Test Guideline 402
GLP: yes
Remarks: Information given is based on data obtained from similar substances.

Skin corrosion/irritation

Product:

Remarks: Irritating to skin.

Components:

67-64-1:
Species: rabbit
Exposure time: 24 h
Method: In vivo
Result: Mild skin irritation

64742-49-0:
Species: rabbit
Result: Irritating to skin.

64742-89-8:
Species: rabbit
Exposure time: 4 h
Result: Irritating to skin.

68410-97-9:
Species: rabbit
Result: Irritating to skin.

108-65-6:
Species: rabbit
Method: OECD Test Guideline 404
Result: No skin irritation

108-88-3:
Species: rabbit
Exposure time: 4 h
Result: Irritating to skin.

110-19-0:
Species: rabbit
Result: No skin irritation

123-86-4:
Species: rabbit
Method: OECD Test Guideline 404
Result: No skin irritation
GLP: no

1330-20-7:
Species: rabbit
Exposure time: 24 h
Result: Irritating to skin.

100-41-4:
Species: rabbit
Result: Mild skin irritation

142-82-5:
Species: rabbit
Exposure time: 24 h
Method: OECD Test Guideline 404
Result: Irritating to skin.
GLP: yes
Remarks: Based on a similar product formulation.

Serious eye damage/eye irritation

Product:

Remarks: Irritating to eyes.

Components:

67-64-1:
Species: rabbit
Result: Irritating to eyes.
Exposure time: 24 h

64742-49-0:
Species: rabbit
Result: Irritating to eyes.

64742-89-8:
Species: rabbit
Result: Irritating to eyes.

68410-97-9:
Species: rabbit
Result: Irritating to eyes.

108-65-6:
Species: rabbit
Result: No eye irritation
Method: OECD Test Guideline 405

108-88-3:
Species: rabbit
Result: Irritating to eyes.
Method: OECD Test Guideline 405

110-19-0:
Species: rabbit
Result: No eye irritation

123-86-4:
Species: rabbit
Result: No eye irritation
GLP: yes

1330-20-7:
Species: rabbit
Result: Irritating to eyes.

100-41-4:
Species: rabbit
Result: Mild eye irritation

142-82-5:
Species: rabbit
Result: Irritating to eyes.
Method: OECD Test Guideline 405
GLP: yes
Remarks: Information given is based on data obtained from similar substances.

Respiratory or skin sensitisation

Components:

67-64-1:
Test Type: Maximization test
Species: guinea pig
Result: Did not cause sensitisation on laboratory animals.

64742-49-0:
Test Type: Buehler Test
Species: guinea pig
Result: Did not cause sensitisation on laboratory animals.

64742-89-8:
Test Type: Buehler Test
Species: guinea pig
Result: Did not cause sensitisation on laboratory animals.

108-65-6:
Test Type: Maximization test
Species: guinea pig
Method: OECD Test Guideline 406
Result: Did not cause sensitisation on laboratory animals.
GLP: no

108-88-3:

Test Type: Maximisation Test (GPMT)
Species: guinea pig
Result: Did not cause sensitisation on laboratory animals.
GLP: yes

110-19-0:
Test Type: Maximization test
Species: guinea pig
Result: Did not cause sensitisation on laboratory animals.

123-86-4:
Species: guinea pig
Result: Did not cause sensitisation on laboratory animals.

1330-20-7:
Remarks: No data available

100-41-4:
Remarks: No data available

142-82-5:
Test Type: Maximization test
Species: guinea pig
Method: OECD Test Guideline 406
Result: Does not cause skin sensitisation.
Remarks: Based on a similar product formulation.

Germ cell mutagenicity

Components:

67-64-1:

Genotoxicity in vitro : Test Type: Mammalian cell gene mutation assay
Test species: Mouse lymphoma cells
Metabolic activation: Without metabolic activation
Method: OECD Test Guideline 476
Result: negative

: Test Type: Ames test
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

: 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

Genotoxicity in vivo	:	Test Type: In vivo micronucleus test Test species: mouse Application Route: Oral Exposure time: 13 wk Dose: 5,000, 10,000, 20,000 ppm Result: negative
Germ cell mutagenicity-Assessment	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

64742-49-0:

Germ cell mutagenicity-Assessment	:	Mutagenicity classification not possible from current data

64742-89-8:

Germ cell mutagenicity-Assessment	:	Mutagenicity classification not possible from current data

68410-97-9:

Genotoxicity in vitro	:	Test Type: Mammalian cell gene mutation assay Test species: mouse lymphoma cells Result: positive
Genotoxicity in vivo	:	Test Type: In vivo micronucleus test Test species: mouse Method: OECD Test Guideline 474 Result: positive
Germ cell mutagenicity-Assessment	:	Positive result(s) from in vivo heritable germ cell mutagenicity tests in mammals

108-65-6:

Genotoxicity in vitro	:	Test Type: DNA damage and/or repair Test species: rat hepatocytes Metabolic activation: Without metabolic activation Method: OECD Test Guideline 482 Result: negative GLP: yes
Germ cell mutagenicity-Assessment	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

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

Genotoxicity in vivo	:	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	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

110-19-0:

Genotoxicity in vitro	:	Test Type: Chromosome aberration test in vitro Test species: Chinese hamster lung fibroblasts Metabolic activation: with and without metabolic activation Result: negative
Genotoxicity in vivo	:	Test Type: In vivo micronucleus test Test species: mouse Application Route: Oral Result: negative
Germ cell mutagenicity-Assessment	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

123-86-4:

Genotoxicity in vitro	:	Test Type: Chromosome aberration test in vitro Test species: Chinese hamster lung fibroblasts Metabolic activation: Without metabolic activation Method: OECD Test Guideline 473 Result: negative GLP: No data available
Genotoxicity in vivo	:	Test Type: In vivo micronucleus test Test species: mouse (male and female) Application Route: Oral Dose: 500, 1000, 2000 mg/kg bw Method: OECD Test Guideline 474 Result: negative GLP: yes Test substance: Information given is based on data obtained from similar substances.
Germ cell mutagenicity-Assessment	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

1330-20-7:

Genotoxicity in vitro	:	Test Type: Chromosome aberration test in vitro Test species: Chinese hamster ovary (CHO)

		Metabolic activation: with and without metabolic activation Method: Mutagenicity (in vitro mammalian cytogenetic test) Result: negative
	:	Test Type: Sister chromatid exchange assay in mammalian cells Test species: Chinese hamster ovary (CHO) Metabolic activation: with and without metabolic activation Result: negative
Genotoxicity in vivo	:	Test Type: Dominant lethal assay Test species: mouse Application Route: Subcutaneous Exposure time: 8 wk Dose: 1.0 mL/kg Method: OECD Test Guideline 478 Result: negative GLP: no
Germ cell mutagenicity-Assessment	:	Animal testing did not show any mutagenic effects.
100-41-4:		
Genotoxicity in vitro	:	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 GLP: no
	:	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 GLP: yes
Genotoxicity in vivo	:	Test Type: In vivo micronucleus test Test species: mouse (male) Application Route: Oral Method: OECD Test Guideline 474 Result: negative GLP: yes
		Test Type: DNA damage and/or repair

Test species: mouse (male and female)
Application Route: Inhalation
Method: OECD Test Guideline 486
Result: negative
GLP: yes

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

142-82-5:

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro
Test species: Rat liver
Metabolic activation: Without metabolic activation
Method: OECD Test Guideline 473
Result: negative

: Test Type: Ames test
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

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

Carcinogenicity

Components:

67-64-1:

Species: mouse, (female)
Application Route: Dermal
Exposure time: 365 d (90%) or 424 d (100%)
Dose: 0.1ml 90(71mg) or 100% (79mg)
Frequency of Treatment: 3 times per wk
NOAEL: 79

Result: did not display carcinogenic properties

Carcinogenicity - Assessment : Carcinogenicity classification not possible from current data.

64742-49-0:

Carcinogenicity - Assessment : Not classifiable as a human carcinogen.

64742-89-8:

Carcinogenicity - Assessment : Not classifiable as a human carcinogen.

68410-97-9:

Species: mouse
NOAEL: 50 mg/kg bw/day

Method: OECD Test Guideline 451
Result: evidence of carcinogenic activity

Carcinogenicity - Assessment : Possible human carcinogen

108-65-6:
Species: rat, (male and female)
Application Route: inhalation (vapour)
Exposure time: 2 yr
Dose: 0, 300, 1000, 3000 ppm
Frequency of Treatment: 6 hr/d, 5 d/wk
NOAEL: No observed adverse effect level: 3,000 ppm

Method: OECD Test Guideline 453
Result: did not display carcinogenic properties
GLP: yes

Carcinogenicity - Assessment : No evidence of carcinogenicity in animal studies.

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.

110-19-0:
Remarks: This information is not available.

Carcinogenicity - Assessment : No evidence of carcinogenicity in animal studies.

123-86-4:
Remarks: This information is not available.

Carcinogenicity - As- : No evidence of carcinogenicity in animal studies.

sessment

1330-20-7:
Species: mouse, (male and female)
Application Route: Oral
Exposure time: 103 wk
Dose: 0, 500 or 1000 mg/kg
Frequency of Treatment: 5 days/week
Method: Directive 67/548/EEC, Annex V, B.32.
Result: did not display carcinogenic properties
GLP: No data available

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

100-41-4:
Species: mouse, (male and female)
Application Route: Inhalation
Exposure time: 103 wk
Activity duration: 6 h
Dose: 0, 75, 250, 750 ppm
Frequency of Treatment: 5 days/week
NOAEL: 250 ppm

Method: OECD Test Guideline 453
Result: evidence of carcinogenic activity
Symptoms: increased incidences of alveolar/bronchiolar neoplasms, increase incidence of hepatocellular carcinomas
GLP: yes

Carcinogenicity - Assessment : Suspected human carcinogens

142-82-5:
Remarks: This information is not available.

Carcinogenicity - Assessment : Carcinogenicity classification not possible from current data.

Reproductive toxicity

Components:
67-64-1:
Effects on fertility : Species: rat, male
Application Route: oral
Dose: 0, 5000, 10000 mg/L
Frequency of Treatment: 7 days/week
General Toxicity - Parent: LOAEL: 10,000
Fertility: 10,000

Effects on foetal development	:	Species: rat Application Route: Inhalation Dose: 0, 440, 2200, 11000 ppm Frequency of Treatment: 7 days/week General Toxicity Maternal: NOAEC: 2,200 ppm Teratogenicity: NOAEC: 11,000 ppm Embryo-foetal toxicity.: NOAEC: 2,200 ppm Method: OECD Test Guideline 414 Result: No teratogenic potential. GLP: No data available
Reproductive toxicity - Assessment	:	No evidence of adverse effects on sexual function and fertility, and on development, based on animal experiments.

64742-49-0:

Reproductive toxicity - Assessment	:	Fertility classification not possible from current data. Embryotoxicity classification not possible from current data.

64742-89-8:

Reproductive toxicity - Assessment	:	Fertility classification not possible from current data. Embryotoxicity classification not possible from current data.

68410-97-9:

Reproductive toxicity - Assessment	:	Fertility classification not possible from current data. Embryotoxicity classification not possible from current data.

108-65-6:

Effects on fertility	:	Species: rat Application Route: Oral Dose: 0, 100, 300, 1000 mg/kg General Toxicity - Parent: NOAEL: 1,000 mg/kg bw General Toxicity F1: NOAEL: 1,000 mg/kg bw Method: OECD Test Guideline 422 Result: Animal testing did not show any effects on fertility. GLP: yes Remarks: Information given is based on data obtained from similar substances.
Effects on foetal development	:	Species: rat Application Route: Inhalation Dose: 0, 500, 2000, 4000 ppm Duration of Single Treatment: 9 d Frequency of Treatment: 6 hr/day General Toxicity Maternal: NOAEL: 500 ppm Teratogenicity: NOAEL: > 4,000 ppm

GLP: yes

Reproductive toxicity - Assessment : No evidence of adverse effects on sexual function and fertility, and on development, based on animal experiments.

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)
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 : Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

110-19-0:

Effects on fertility : Test Type: Two-generation study
Species: rat
Application Route: Inhalation

Duration of Single Treatment: 6 h
Frequency of Treatment: 7 days/week
General Toxicity - Parent: NOAEL: 2,500 ppm
Method: OECD Test Guideline 416

Reproductive toxicity - Assessment : No evidence of adverse effects on sexual function and fertility, and on development, based on animal experiments.

123-86-4:

Effects on fertility : Species: rat, male and female
Application Route: Inhalation
Dose: 0, 750, 1500, 2000 ppm
Duration of Single Treatment: 6 h
Frequency of Treatment: 7 days/week
General Toxicity - Parent: NOAEC: 750 ppm
General Toxicity F1: NOAEC: 750 ppm
Fertility: NOAEC: 2,000 ppm
Early Embryonic Development: NOAEC: 750 ppm
Symptoms: Effect on reproduction capacity.
Method: OECD Test Guideline 416
GLP: yes

Effects on foetal development : Species: rat, male and female
Application Route: vapour
Dose: 500, 1500, 3000 ppm
Duration of Single Treatment: 6 h
Frequency of Treatment: 5 days/week
GLP: yes

Reproductive toxicity - Assessment : Fertility classification not possible from current data.
Embryotoxicity classification not possible from current data.

1330-20-7:

Effects on fertility : Test Type: Two-generation study
Species: rat, male and female
Application Route: Inhalation
Dose: 0, 25, 100 and 500 ppm
Duration of Single Treatment: 6 h
Frequency of Treatment: 7 days/week
General Toxicity - Parent: NOAEC: > 500 ppm
General Toxicity F1: NOAEC: > 500 ppm
Early Embryonic Development: NOAEC: > 500 ppm
Result: No reproductive effects.

Effects on foetal development : Species: rat
Application Route: Inhalation
Dose: 0, 100, 500, 1000 or 2000 ppm
Duration of Single Treatment: 14 d

		Frequency of Treatment: 6 hr/day General Toxicity Maternal: NOAEC: 500 ppm Teratogenicity: NOAEC: > 2,000 Developmental Toxicity: NOAEC: 100 ppm Result: No teratogenic effects., Developmental toxicity occurred at maternal toxicity dose levels
Reproductive toxicity - Assessment	:	Animal testing did not show any effects on fertility. Damage to fetus not classifiable
100-41-4:		
Effects on fertility	:	Test Type: One generation study Species: rat, male and female Application Route: Inhalation Dose: 0, 100, 500 and 1000 ppm Duration of Single Treatment: 6 h General Toxicity - Parent: NOAEC: 1,000 ppm General Toxicity F1: NOAEC: 100 ppm Symptoms: Reduced foetal weight. Reduced offspring weight gain. Method: OECD Test Guideline 415 Result: No reproductive effects. GLP: yes
Effects on foetal development	:	Species: rat Application Route: Inhalation Dose: 0, 100, 500, 1000, 2000 ppm Duration of Single Treatment: 15 d General Toxicity Maternal: NOAEC: 500 ppm Teratogenicity: NOAEC: 2,000 ppm Developmental Toxicity: NOAEC: 500 ppm Symptoms: Reduced body weight Method: OECD Test Guideline 414 Result: Developmental toxicity occurred at maternal toxicity dose levels GLP: No data available
Reproductive toxicity - Assessment	:	Fertility classification not possible from current data. Embryotoxicity classification not possible from current data.
142-82-5:		
Effects on fertility	:	Test Type: Two-generation study Species: rat, male and female Application Route: vapour Dose: 0, 900, 3000, 9000 ppm Frequency of Treatment: 5 days/week General Toxicity - Parent: NOAEC: 3,000 ppm General Toxicity F1: NOAEC: 3,000 ppm Fertility: NOAEC: 9,000 ppm Symptoms: Reduced maternal body weight gain. Re-

duced offspring weight gain.
Method: OECD Test Guideline 416
Result: No reproductive effects.
GLP: yes
Remarks: Information given is based on data obtained from similar substances.

Effects on foetal development : Species: mouse
Application Route: inhalation (vapour)
Dose: 0, 900, 3000, 9000 ppm
Duration of Single Treatment: 10 d
Frequency of Treatment: 6 hr/day
General Toxicity Maternal: NOAEC: 900 ppm
Developmental Toxicity: NOAEC: 3,000 ppm
Symptoms: Skeletal malformations.
Method: OECD Test Guideline 414
GLP: yes
Remarks: Information given is based on data obtained from similar substances.

Reproductive toxicity - Assessment : Animal testing did not show any effects on fertility.
Embryotoxicity classification not possible from current data.

STOT - single exposure

Product: No data available

Components:

67-64-1:

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.	

64742-49-0:

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, cate-	

		gory 3 with narcotic effects.	

64742-89-8:No data available

68410-97-9:

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.	

108-65-6:No data available

108-88-3:

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.	

110-19-0:

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

123-86-4:

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.	

1330-20-7:

Exposure routes:	Target Organs:	Assessment:	Remarks:
Inhalation	Respiratory system	May cause respiratory irritation., The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.	

100-41-4:No data available

142-82-5:

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.	

STOT - repeated exposure

Product: No data available

Components:

67-64-1: No data available

64742-49-0: No data available

64742-89-8: No data available

68410-97-9: No data available

108-65-6: No data available

108-88-3:

Exposure routes:	Target Organs:	Assessment:	Remarks:
Inhalation	Auditory system, Eyes	May cause damage to organs through prolonged or repeated exposure., The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.	

110-19-0: No data available

123-86-4: No data available

1330-20-7:

Exposure routes:	Target Organs:	Assessment:	Remarks:
	Liver, Kidney, Central nervous system	May cause damage to organs through prolonged or repeated exposure., The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.	

100-41-4:

Exposure routes:	Target Organs:	Assessment:	Remarks:

	Auditory system	May cause damage to organs through prolonged or repeated exposure., The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.	

142-82-5: No data available

Repeated dose toxicity

Components:

67-64-1:
Species: mouse, male
NOAEL: 20000
Application Route: Oral
Exposure time: 13 wk
Number of exposures: daily
Dose: 1250, 2500, 5000, 10000, 20000
Method: OECD Test Guideline 408
GLP: No data available

Species: mouse, female
NOAEL: 20000
LOAEL: 50000
Application Route: Oral
Exposure time: 13 wk
Number of exposures: daily
Dose: 2500, 5000, 10000, 20000, 5000
Method: OECD Test Guideline 408
GLP: No data available

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

64742-89-8:
Species: rat, male and female
NOAEL: 1402
Application Route: inhalation (vapour)
Test atmosphere: vapour
Exposure time: 13 weeks
Number of exposures: 6 hours/day, 5 days/week
Dose: 322, 1402, 9869 mg/m3
GLP: yes

Target Organs: Kidney
Symptoms: Nasal and ocular discharge

108-65-6:
Species: rat, male and female
NOAEL: > 1,000 mg/kg
Application Route: Oral
Dose: 0, 100, 300, 1000 mg/kg
Method: OECD Test Guideline 422

108-88-3:
Species: rat, male and female
NOAEL: 300
Application Route: inhalation (vapour)
Exposure time: 6, 12, or 18 mths
Number of exposures: 6 h/d, 5 d/wk
Dose: 0, 30, 100, 300 ppm
Method: OECD Test Guideline 453

Repeated dose toxicity - Assessment : Causes skin irritation.

110-19-0:
Species: rat
NOAEL: 316 mg/kg
Application Route: Oral
Exposure time: 92 d

123-86-4:
Species: rat, male and female
NOAEL: 500
Application Route: inhalation (vapour)
Exposure time: 13 wk
Number of exposures: 6 h/d, 5d/wk
Dose: 500, 1500, 3000 ppm
GLP: yes
Symptoms: oral or nasal discharge

1330-20-7:
Species: rat, male and female
NOAEL: 250 mg/kg
Application Route: Oral
Exposure time: 103 wk
Number of exposures: 5 d/wk
Dose: 0, 250 or 500 mg/kg
Assessment: The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

100-41-4:
Species: rat, male and female

NOAEL: 75 mg/kg
Application Route: Oral
Exposure time: 28 d
Dose: 75, 250 and 750 mg/kg bw/day
Method: OECD Test Guideline 407
GLP: yes
Symptoms: Increased kidney and liver weights

142-82-5:
Species: rat, male
NOAEL: 12470 mg/m3
Application Route: inhalation (vapour)
Exposure time: 16 wks
Number of exposures: 12 h/d, 7 d/wk
Dose: 0, 12470 mg/3

Repeated dose toxicity - Assessment : Causes skin irritation.

Aspiration toxicity

Components:

64742-49-0:
May be fatal if swallowed and enters airways.

64742-89-8:
May be fatal if swallowed and enters airways.

68410-97-9:
May be fatal if swallowed and enters airways.

108-88-3:
Aspiration Toxicity - Category 1

1330-20-7:
May be fatal if swallowed and enters airways.

100-41-4:
May be fatal if swallowed and enters airways.

142-82-5:
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:

67-64-1:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 6,100 mg/l Exposure time: 48 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 7,630 mg/l Exposure time: 48 h Test substance: Acetone
Toxicity to algae	:	Remarks: No data available

64742-49-0:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 10 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 4.5 mg/l Exposure time: 48 h
Toxicity to algae	:	EC50 (Pseudokirchneriella subcapitata (green algae)): 3.71 mg/l Exposure time: 96 h
Ecotoxicology Assessment		
Acute aquatic toxicity	:	Toxic to aquatic life.
Chronic aquatic toxicity	:	Toxic to aquatic life with long lasting effects.

64742-89-8:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 8.2 mg/l Exposure time: 96 h Test Type: semi-static test
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 4.5 mg/l Exposure time: 48 h Test Type: Immobilization Analytical monitoring: yes
Toxicity to algae	:	EC50 (Pseudokirchneriella subcapitata (green algae)):

		3.7 mg/l Exposure time: 96 h Test Type: static test
Ecotoxicology Assessment Acute aquatic toxicity	:	Toxic to aquatic life.
Chronic aquatic toxicity	:	Toxic to aquatic life with long lasting effects.

68410-97-9:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 8.2 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 4.5 mg/l Exposure time: 48 h
Toxicity to algae	:	EC50 (Pseudokirchneriella subcapitata (green algae)): 3.1 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
Ecotoxicology Assessment Acute aquatic toxicity	:	Toxic to aquatic life.
Chronic aquatic toxicity	:	Toxic to aquatic life with long lasting effects.

108-65-6:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l Exposure time: 96 h Test Type: static test Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 500 mg/l Exposure time: 48 h Test Type: Immobilization
Toxicity to algae	:	EC50 (Selenastrum capricornutum (green algae)): > 1,000 mg/l End point: Growth rate Exposure time: 96 h Test Type: static test

108-88-3:

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

110-19-0:

Toxicity to fish	:	LC50 (Oryzias latipes (Japanese medaka)): 17 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	(Daphnia magna (Water flea)): 25 mg/l Exposure time: 48 h Test Type: static test
Toxicity to algae	:	EC50 (Pseudokirchneriella subcapitata): 370 mg/l Exposure time: 72 h Test Type: static test
Ecotoxicology Assessment Acute aquatic toxicity	:	This product has no known ecotoxicological effects.
Chronic aquatic toxicity	:	This product has no known ecotoxicological effects.

123-86-4:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 18 mg/l Exposure time: 96 h Test Type: flow-through test Method: OECD Test Guideline 203 GLP: no
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 44 mg/l Exposure time: 48 h Test Type: static test
Toxicity to algae	:	EC50 (Desmodesmus subspicatus (green algae)): 674.7 mg/l

End point: Growth rate
Exposure time: 72 h

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 23 mg/l
Exposure time: 21 d

Toxicity to bacteria : EC 50 (Tetrahymena pyriformis (Ciliate)): 356 mg/l
Exposure time: 40 h
Test Type: Static

Ecotoxicology Assessment
Acute aquatic toxicity : Harmful to aquatic life.

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

1330-20-7:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 2.6 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1 mg/l
Exposure time: 24 h
Test Type: static test
Method: OECD Test Guideline 202

Toxicity to algae : EC50 (Pseudokirchneriella subcapitata): 4.36 mg/l
End point: Growth rate
Exposure time: 73 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes

Ecotoxicology Assessment
Acute aquatic toxicity : Toxic to aquatic life.

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

100-41-4:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 4.2 mg/l
Exposure time: 96 h
Test Type: semi-static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1.8 mg/l
Exposure time: 48 h
Test Type: static test

Toxicity to algae	:	EC50 (Pseudokirchneriella subcapitata): 5.4 mg/l Exposure time: 72 h Test Type: static test
Toxicity to bacteria	:	Remarks: No data available
Ecotoxicology Assessment Acute aquatic toxicity	:	Toxic to aquatic life.
Chronic aquatic toxicity	:	Toxic to aquatic life with long lasting effects.

142-82-5:

Toxicity to fish	:	LC50 (Carassius auratus (goldfish)): 4 mg/l Exposure time: 24 h Remarks: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 1.5 mg/l Exposure time: 48 h Test Type: static test Remarks: Very toxic to aquatic organisms.
Toxicity to algae	:	Remarks: No data available
Ecotoxicology Assessment Acute aquatic toxicity	:	Very toxic to aquatic life.
Chronic aquatic toxicity	:	Very toxic to aquatic life with long lasting effects.

Persistence and degradability

Components:

67-64-1:

Biodegradability	:	Remarks: Readily biodegradable

64742-49-0:

Biodegradability	:	aerobic Inoculum: activated sludge Concentration: 20 mg/l Biodegradation: 74.30 % Exposure time: 56 d GLP: yes Remarks: Inherently biodegradable.

64742-89-8:

Biodegradability	:	Concentration: 49.2 mg/l Result: Readily biodegradable. Biodegradation: 77 % Testing period: 2 d

Exposure time: 28 d
GLP: yes

108-65-6:

Biodegradability : aerobic
Inoculum: activated sludge
Concentration: 76.4 mg/l
Result: Readily biodegradable.
Biodegradation: 90 %
Exposure time: 28 d
GLP: yes

Biochemical Oxygen Demand (BOD) : 0.36 mg/l

Chemical Oxygen Demand (COD) : 1.74 mg/l

108-88-3:

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

110-19-0:

Biodegradability : aerobic
Inoculum: Sewage
Result: Readily biodegradable.
Biodegradation: 81 %
Exposure time: 20 d

123-86-4:

Biodegradability : Biodegradation: 83 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

Chemical Oxygen Demand (COD) : 0.00169 mg/g

BOD/COD : BOD/COD: 72 %

Theoritical Oxygen Demand (ThOD) : 0.0022 mg/g

1330-20-7:

Biodegradability : Inoculum: activated sludge
Result: Readily biodegradable.
Biodegradation: 72 %
Exposure time: 20 d

100-41-4:

Biodegradability	:	Inoculum: activated sludge Concentration: 22 mg/l Result: Readily biodegradable. Biodegradation: 70 % Exposure time: 28 d GLP: yes

142-82-5:

Biodegradability	:	Primary biodegradation Inoculum: activated sludge Concentration: 100 mg/l Biodegradation: 100 % Testing period: 2 d Exposure time: 25 d Remarks: Readily biodegradable

Bioaccumulative potential

Components:

67-64-1:

Partition coefficient: n-octanol/water	:	log Pow: -0.24

64742-49-0:

Partition coefficient: n-octanol/water	:	Remarks: No data available

64742-89-8:

Partition coefficient: n-octanol/water	:	log Pow: 2.13 - 4.85 (25 °C)

108-65-6:

Partition coefficient: n-octanol/water	:	log Pow: 0.43

108-88-3:

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

110-19-0:

Partition coefficient: n-octanol/water	:	log Pow: 1.78

123-86-4:

Bioaccumulation	:	Species: Fish Bioconcentration factor (BCF): 15
Partition coefficient: n-	:	log Pow: 1.82

octanol/water

1330-20-7:
Partition coefficient: n-octanol/water : log Pow: 2.77 - 3.15

100-41-4:
Partition coefficient: n-octanol/water : log Pow: 2.92

Mobility in soil

No data available

Other adverse effects

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 with long lasting effects.

Components:

100-41-4:
Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.

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 drum.

SECTION 14. TRANSPORT INFORMATION

IATA (International Air Transport Association): UN1263, PAINT RELATED MATERIAL, 3, II, Flash Point:-18 °C(-0.40 °F)

IMDG (International Maritime Dangerous Goods): UN1263, PAINT RELATED MATERIAL, 3, II

DOT (Department of Transportation): UN1263, PAINT RELATED MATERIAL, 3, II

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : Flammable liquid, Carcinogen, Harmful by skin absorption., Moderate skin irritant, Moderate eye irritant, Moderate respiratory irritant, Teratogen, Reproductive hazard, Mutagen

WHMIS Classification : : Flammable Liquid
D2A: Very Toxic Material Causing Other Toxic Effects
D2B: 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)
Mixed xylenes	1330-20-7	100	1901

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
Chronic Health Hazard
Acute Health Hazard

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

108-88-3	Toluene	10.54 %
100-41-4	Ethylbenzene	1.5983 %
71-43-2	Benzene	0.0281 %
110-54-3	Hexane	0.0031 %

67-56-1	Methanol	0.0022 %
91-20-3	Naphthalene	0.0003 %
98-82-8	Cumene	0.000 %

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

67-64-1	Acetone	37.3599 %
108-88-3	Toluene	10.54 %
110-19-0	Isobutyl acetate	10.5389 %
123-86-4	n-Butyl acetate	5.3421 %
1330-20-7	Mixed xylenes	5.2608 %
100-41-4	Ethylbenzene	1.5983 %
110-82-7	Cyclohexane	0.3931 %
71-43-2	Benzene	0.0281 %
67-56-1	Methanol	0.0022 %
98-82-8	Cumene	0.000 %

Clean Water Act

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

108-88-3	Toluene	10.54 %
110-19-0	Isobutyl acetate	10.5389 %
123-86-4	n-Butyl acetate	5.3421 %
1330-20-7	Mixed xylenes	5.2608 %
100-41-4	Ethylbenzene	1.5983 %
110-82-7	Cyclohexane	0.3931 %
71-43-2	Benzene	0.0281 %
91-20-3	Naphthalene	0.0003 %

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

108-88-3	Toluene	10.54 %
123-86-4	n-Butyl acetate	5.3421 %
1330-20-7	Mixed xylenes	5.2608 %
100-41-4	Ethylbenzene	1.5983 %
110-82-7	Cyclohexane	0.3931 %
71-43-2	Benzene	0.0281 %
91-20-3	Naphthalene	0.0003 %

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

108-88-3	Toluene	10.54 %
100-41-4	Ethylbenzene	1.5983 %

US State Regulations

Massachusetts Right To Know

67-64-1	Acetone	30 - 50 %
108-88-3	Toluene	10 - 20 %
110-19-0	Isobutyl acetate	10 - 20 %
123-86-4	n-Butyl acetate	5 - 10 %

1330-20-7	Mixed xylenes	5 - 10 %
100-41-4	Ethylbenzene	1 - 5 %
71-43-2	Benzene	0 - 0.1 %

Pennsylvania Right To Know

67-64-1	Acetone	30 - 50 %
64742-49-0	Naphtha (pet), hydrotreated lt	0 - 20 %
64742-89-8	Solvent naphtha (pet), lt aliph.	0 - 20 %
68410-97-9	Distillates, pet, lt dist hydrotreat process, low-boil	0 - 20 %
108-65-6	Glycol ether PM acetate	10 - 20 %
108-88-3	Toluene	10 - 20 %
110-19-0	Isobutyl acetate	10 - 20 %
123-86-4	n-Butyl acetate	5 - 10 %
1330-20-7	Mixed xylenes	5 - 10 %
100-41-4	Ethylbenzene	1 - 5 %
110-82-7	Cyclohexane	0.1 - 1 %
71-43-2	Benzene	0 - 0.1 %

New Jersey Right To Know

67-64-1	Acetone	30 - 50 %
64742-49-0	Naphtha (pet), hydrotreated lt	0 - 20 %
64742-89-8	Solvent naphtha (pet), lt aliph.	0 - 20 %
68410-97-9	Distillates, pet, lt dist hydrotreat process, low-boil	0 - 20 %
108-65-6	Glycol ether PM acetate	10 - 20 %
108-88-3	Toluene	10 - 20 %
110-19-0	Isobutyl acetate	10 - 20 %
123-86-4	n-Butyl acetate	5 - 10 %
1330-20-7	Mixed xylenes	5 - 10 %
100-41-4	Ethylbenzene	1 - 5 %

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
91-20-3	Naphthalene
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
71-43-2	Benzene
67-56-1	Methanol

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

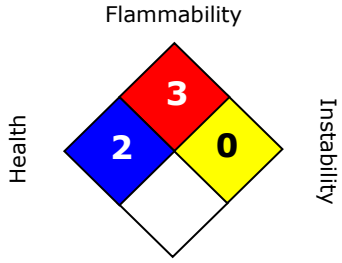
Switzerland. New notified substances and declared	:	y (positive listing)

preparations		(The formulation contains substances listed on the Swiss Inventory)
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) (Not in compliance with the inventory)
Japan. ENCS - Existing and New Chemical Substances Inventory	:	n (Negative listing) (Not in compliance with the inventory)
Japan. ISHL - Inventory of Chemical Substances (METI)	:	n (Negative listing) (Not 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)

SECTION 16. OTHER INFORMATION

VERSION 3.0
REVISION DATE 06/20/2019

NFPA:



HMIS III:

HEALTH	**2***
FLAMMABILITY	**3**
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.

Legecy MSDS: R0329927

Material number:
16069388, 547005, 146398

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
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure	OSHA	Occupational Safety & Health Admin-

	Scenario Tool		istration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philipines 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 Compositon, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50		Lethal Concentration 50%	