Version	Revision Date:	SDS Number:	Date of last issue: 24.06.2016
4.0	05.10.2016	778985-00002	Date of first issue: 29.09.2010

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Battery Terminal Spray 150ml

Product code : 0890 104

Manufacturer or supplier's details

Company : Wurth Australia Pty Ltd

Address : 2/1 Healey Road
Dandenong South, Victoria, 3175

Telephone : +61 3 8788 1111

Emergency telephone number : 1300 657 765. Advisory office in case of poisoning - National Poisons Centre: 131 126

E-mail address : prodsafe@wuerth.com

Recommended use of the chemical and restrictions on use

Recommended use : Corrosion inhibitor

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable aerosols : Category 1

Gases under pressure : Liquefied gas

Serious eye damage/eye irritation : Category 2A

Specific target organ toxicity - single exposure : Category 3

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : H222 Extremely flammable aerosol.
H280 Contains gas under pressure; may explode if heated.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.

Precautionary statements : **Prevention:**
P210 Keep away from heat/sparks/open flames/hot surfaces.

No smoking.
P211 Do not spray on an open flame or other ignition source.
P251 Pressurized container: Do not pierce or burn, even after use.
P261 Avoid breathing spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear eye protection/ face protection.

Response:

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.
P337 + P313 If eye irritation persists: Get medical advice/ attention.

Storage:

P405 Store locked up.
P410 + P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.

Disposal:

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

Other hazards which do not result in classification

May displace oxygen and cause rapid suffocation.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
Dimethyl ether	115-10-6	>= 30 - < 60
Isobutane	75-28-5	>= 10 - < 30
Methyl acetate	79-20-9	>= 10 - < 30
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	64742-49-0	< 10
Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	64742-49-0	< 10
Solvent naphtha (petroleum), light arom.	64742-95-6	< 10
Propane	74-98-6	< 10
n-Hexane	110-54-3	< 10

SECTION 4. FIRST AID MEASURES

General advice : In the case of accident or if you feel unwell, seek medical advice immediately.
When symptoms persist or in all cases of doubt seek medical advice.

If inhaled	:	If inhaled, remove to fresh air. Get medical attention.
In case of skin contact	:	In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.
In case of eye contact	:	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lens, if worn. Get medical attention.
If swallowed	:	If swallowed, DO NOT induce vomiting. Get medical attention. Rinse mouth thoroughly with water.
Most important symptoms and effects, both acute and delayed	:	Causes serious eye irritation. May cause drowsiness or dizziness.
Protection of first-aiders	:	First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists.
Notes to physician	:	Treat symptomatically and supportively.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Water spray Alcohol-resistant foam Carbon dioxide (CO2) Dry chemical
Unsuitable extinguishing media	:	None known.
Specific hazards during fire-fighting	:	Flash back possible over considerable distance. Vapours may form explosive mixtures with air. Exposure to combustion products may be a hazard to health. If the temperature rises there is danger of the vessels bursting due to the high vapor pressure.
Hazardous combustion products	:	Carbon oxides
Specific extinguishing methods	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.
Special protective equipment	:	In the event of fire, wear self-contained breathing apparatus.

for firefighters		Use personal protective equipment.
Hazchem Code	:	2YE

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Remove all sources of ignition. Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations.
Environmental precautions	:	Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g. by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	:	Non-sparking tools should be used. Soak up with inert absorbent material. Suppress (knock down) gases/vapours/mists with a water spray jet. For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

SECTION 7. HANDLING AND STORAGE

Technical measures	:	See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
Local/Total ventilation	:	Use with local exhaust ventilation. Use only in an area equipped with explosion proof exhaust ventilation.
Advice on safe handling	:	Do not get on skin or clothing. Do not breathe vapours or spray mist. Do not swallow. Do not get in eyes. Handle in accordance with good industrial hygiene and safety practice. Keep away from heat and sources of ignition. Take precautionary measures against static discharges. Take care to prevent spills, waste and minimize release to the environment.
		Do not spray on an open flame or other ignition source.

Hygiene measures	:	Ensure that eye flushing systems and safety showers are located close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.
Conditions for safe storage	:	Store locked up. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations. Do not pierce or burn, even after use. Keep cool. Protect from sunlight.
Materials to avoid	:	Do not store with the following product types: Self-reactive substances and mixtures Organic peroxides Oxidizing agents Flammable liquids Pyrophoric liquids Pyrophoric solids Self-heating substances and mixtures Explosives
Recommended storage temperature	:	10 - 40 °C

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Dimethyl ether	115-10-6	TWA	400 ppm 760 mg/m3	AU OEL
		STEL	500 ppm 950 mg/m3	AU OEL
Isobutane	75-28-5	STEL	1,000 ppm	ACGIH
Methyl acetate	79-20-9	TWA	200 ppm 606 mg/m3	AU OEL
		STEL	250 ppm 757 mg/m3	AU OEL
		TWA	200 ppm	ACGIH
		STEL	250 ppm	ACGIH
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	64742-49-0	TWA	900 mg/m3	AU OEL
Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	64742-49-0	TWA	900 mg/m3	AU OEL
Solvent naphtha (petroleum), light arom.	64742-95-6	TWA	900 mg/m3	AU OEL
n-Hexane	110-54-3	TWA	20 ppm 72 mg/m3	AU OEL
		TWA	50 ppm	ACGIH

Occupational exposure limits of decomposition products

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Formaldehyde	50-00-0	TWA	1 ppm 1.2 mg/m3	AU OEL
	Further information: Category 2 (Carc. 2) Suspected human carcinogen, Sensitiser			
		STEL	2 ppm 2.5 mg/m3	AU OEL
	Further information: Category 2 (Carc. 2) Suspected human carcinogen, Sensitiser			
		C	0.3 ppm	ACGIH
Methanol	67-56-1	STEL	250 ppm 328 mg/m3	AU OEL
	Further information: Skin absorption			
		TWA	200 ppm 262 mg/m3	AU OEL
	Further information: Skin absorption			
		TWA	200 ppm	ACGIH
		STEL	250 ppm	ACGIH

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
n-Hexane	110-54-3	2,5-Hexanedione	Urine	End of shift at end of workweek	0.4 mg/l	ACGIH BEI

Engineering measures : Processing may form hazardous compounds (see section 10).
Minimize workplace exposure concentrations.
Use only in an area equipped with explosion proof exhaust ventilation.
Use with local exhaust ventilation.

Personal protective equipment

Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.

Filter type : Self-contained breathing apparatus

Hand protection

Material : Nitrile rubber
Break through time : 480 min
Glove thickness : 0.45 mm

Remarks : Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous sub-

stance and specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.

Eye protection : Wear the following personal protective equipment:
Safety goggles

Skin and body protection : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.
Wear the following personal protective equipment:
Flame retardant antistatic protective clothing.
Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	aerosol
Propellant	:	Dimethyl ether, Isobutane, Propane, Butane
Colour	:	blue
Odour	:	solvent-like
Odour Threshold	:	No data available
pH	:	No data available
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	-40 °C
Flash point	:	Not applicable
Evaporation rate	:	Not applicable
Flammability (solid, gas)	:	Extremely flammable aerosol.
Upper explosion limit	:	11 %(V)
Lower explosion limit	:	1 %(V)
Vapour pressure	:	Not applicable
Relative vapour density	:	Not applicable
Density	:	0.85 g/cm3 (20 °C) Active ingredient
Solubility(ies)		
Water solubility	:	insoluble
Partition coefficient: n-	:	Not applicable

octanol/water

Auto-ignition temperature	:	200 °C
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	Not applicable
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Not classified as a reactivity hazard.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Extremely flammable aerosol. Vapours may form explosive mixture with air. If the temperature rises there is danger of the vessels bursting due to the high vapor pressure. Can react with strong oxidizing agents. Hazardous decomposition products will be formed at elevated temperatures.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	Oxidizing agents

Hazardous decomposition products

Thermal decomposition	:	Formaldehyde Methanol

SECTION 11. TOXICOLOGICAL INFORMATION

Exposure routes	:	Inhalation Skin contact Ingestion Eye contact

Acute toxicity

Not classified based on available information.

Components:

Dimethyl ether:

Acute inhalation toxicity	:	LC50 (Rat): 164000 ppm Exposure time: 4 h Test atmosphere: gas

Isobutane:

Acute inhalation toxicity	:	LC50 (Mouse): 260200 ppm Exposure time: 4 h Test atmosphere: gas

Methyl acetate:

Acute oral toxicity	:	LD50 (Rat): 6,482 mg/kg Method: OECD Test Guideline 401
Acute inhalation toxicity	:	LC0 (Rabbit): 49.2 mg/l Exposure time: 4 h Test atmosphere: vapour Method: OECD Test Guideline 403
Acute dermal toxicity	:	LD50 (Rat): > 2,000 mg/kg Method: OECD Test Guideline 402 Assessment: The substance or mixture has no acute dermal toxicity

Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane:

Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): > 5.61 mg/l Exposure time: 4 h Test atmosphere: vapour
Acute dermal toxicity	:	LD50 (Rabbit): > 2,000 mg/kg

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics:

Acute oral toxicity	:	LD50 (Rat): > 5,840 mg/kg Remarks: Based on data from similar materials
Acute inhalation toxicity	:	LC50 (Rat): > 23.3 mg/l Exposure time: 4 h Test atmosphere: vapour Remarks: Based on data from similar materials
Acute dermal toxicity	:	LD50 (Rat): > 2,800 mg/kg Assessment: The substance or mixture has no acute dermal toxicity Remarks: Based on data from similar materials

Solvent naphtha (petroleum), light arom.:

Acute oral toxicity	:	LD50 (Rat, female): 3,492 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): > 6.193 mg/l Exposure time: 4 h Test atmosphere: vapour Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50 (Rabbit): > 3,160 mg/kg Assessment: The substance or mixture has no acute dermal toxicity

Propane:

Acute inhalation toxicity	:	LC50 (Rat): > 800000 ppm Exposure time: 15 min Test atmosphere: gas

n-Hexane:

Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg Method: OECD Test Guideline 401
Acute inhalation toxicity	:	LC50 (Rat): > 31.86 mg/l Exposure time: 4 h Test atmosphere: vapour Method: OECD Test Guideline 403 Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50 (Rabbit): > 2,000 mg/kg

Skin corrosion/irritation

Not classified based on available information.

Components:

Methyl acetate:

Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation

Assessment: Repeated exposure may cause skin dryness or cracking.

Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane:

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

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics:

Species: Rabbit
Result: Skin irritation
Remarks: Based on data from similar materials

Solvent naphtha (petroleum), light arom.:

Assessment: Repeated exposure may cause skin dryness or cracking.

n-Hexane:

Species: Rabbit
Result: Skin irritation

Serious eye damage/eye irritation

Causes serious eye irritation.

Components:

Methyl acetate:

Species: Rabbit
Result: Irritation to eyes, reversing within 21 days
Method: OECD Test Guideline 405

Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane:

Species: Rabbit
Result: No eye irritation

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics:

Species: Rabbit
Result: No eye irritation
Remarks: Based on data from similar materials

Solvent naphtha (petroleum), light arom.:

Species: Rabbit
Result: No eye irritation

n-Hexane:

Species: Rabbit
Result: No eye irritation

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Components:

Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane:

Test Type: Buehler Test
Exposure routes: Skin contact
Species: Guinea pig
Result: negative

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics:

Test Type: Maximisation Test
Exposure routes: Skin contact
Species: Guinea pig
Result: negative
Remarks: Based on data from similar materials

Solvent naphtha (petroleum), light arom.:

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

Result: negative

n-Hexane:

Test Type: Local lymph node assay (LLNA)
Exposure routes: Skin contact
Species: Mouse
Result: negative

Chronic toxicity

Germ cell mutagenicity

Not classified based on available information.

Components:

Dimethyl ether:

Genotoxicity in vitro	:	Test Type: Bacterial reverse mutation assay (AMES) Method: OECD Test Guideline 471 Result: negative
Genotoxicity in vivo	:	Test Type: Sex-linked recessive lethal test in Drosophila melanogaster (in vivo) Application Route: inhalation (gas) Method: OECD Test Guideline 477 Result: negative

Isobutane:

Genotoxicity in vitro	:	Test Type: Chromosome aberration test in vitro Method: OECD Test Guideline 473 Result: negative Remarks: Based on data from similar materials
Genotoxicity in vivo	:	Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Rat Application Route: inhalation (gas) Method: OECD Test Guideline 474 Result: negative Remarks: Based on data from similar materials

Methyl acetate:

Genotoxicity in vitro	:	Test Type: Bacterial reverse mutation assay (AMES) Method: OECD Test Guideline 471 Result: negative
Genotoxicity in vivo	:	Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Rat Application Route: Inhalation Method: OECD Test Guideline 474 Result: negative

Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane:

Genotoxicity in vitro	:	Test Type: Bacterial reverse mutation assay (AMES) Result: negative
Genotoxicity in vivo	:	Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Rat Application Route: inhalation (vapour) Method: OPPTS 870.5395 Result: negative

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics:

Genotoxicity in vitro	:	Test Type: Chromosome aberration test in vitro Result: negative Remarks: Based on data from similar materials
	:	Test Type: Bacterial reverse mutation assay (AMES) Result: negative Remarks: Based on data from similar materials
	:	Test Type: In vitro mammalian cell gene mutation test Method: OECD Test Guideline 476 Result: negative Remarks: Based on data from similar materials

Solvent naphtha (petroleum), light arom.:

Genotoxicity in vitro	:	Test Type: Chromosome aberration test in vitro Result: negative
Genotoxicity in vivo	:	Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis) Species: Rat Application Route: inhalation (vapour) Result: negative

Propane:

Genotoxicity in vitro	:	Test Type: Bacterial reverse mutation assay (AMES) Result: negative
Genotoxicity in vivo	:	Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Rat Application Route: inhalation (gas) Method: OECD Test Guideline 474 Result: negative

n-Hexane:

Genotoxicity in vitro	:	Test Type: Bacterial reverse mutation assay (AMES) Result: negative
	:	Test Type: In vitro mammalian cell gene mutation test Result: positive
Genotoxicity in vivo	:	Test Type: Rodent dominant lethal test (germ cell) (in vivo)

		Species: Mouse Application Route: inhalation (vapour) Result: negative
Germ cell mutagenicity - Assessment	:	Weight of evidence does not support classification as a germ cell mutagen.

Carcinogenicity

Not classified based on available information.

Components:

Dimethyl ether:

Species: Rat
Application Route: inhalation (vapour)
Exposure time: 2 Years
Method: OECD Test Guideline 453
Result: negative

Methyl acetate:

Species: Rat
Application Route: Inhalation
Exposure time: 18 Months
Result: negative

Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane:

Species: Mouse
Application Route: Skin contact
Exposure time: 102 weeks
Result: negative

n-Hexane:

Species: Rat
Application Route: inhalation (vapour)
Exposure time: 2 Years
Method: OECD Test Guideline 451
Result: negative

Reproductive toxicity

Not classified based on available information.

Components:

Dimethyl ether:

Effects on foetal development	:	Test Type: Embryo-foetal development Species: Rat Application Route: inhalation (vapour) Method: OECD Test Guideline 414 Result: negative

Isobutane:

Effects on fertility	:	Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test

		Species: Rat Application Route: Inhalation Method: OECD Test Guideline 422 Result: negative
Effects on foetal development	:	Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test Species: Rat Application Route: inhalation (gas) Method: OECD Test Guideline 422 Result: negative

Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane:

Effects on fertility	:	Test Type: Two-generation reproduction toxicity study Species: Rat Application Route: inhalation (vapour) Result: negative
Effects on foetal development	:	Test Type: Embryo-foetal development Species: Rat Application Route: inhalation (vapour) Result: negative

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics:

Effects on fertility	:	Test Type: Two-generation reproduction toxicity study Species: Rat Application Route: inhalation (vapour) Result: negative Remarks: Based on data from similar materials
Effects on foetal development	:	Test Type: Fertility/early embryonic development Species: Rat Application Route: inhalation (vapour) Result: negative Remarks: Based on data from similar materials

Solvent naphtha (petroleum), light arom.:

Effects on fertility	:	Test Type: Three-generation reproduction toxicity study Species: Rat Application Route: inhalation (vapour) Result: negative
Effects on foetal development	:	Test Type: Embryo-foetal development Species: Mouse Application Route: inhalation (vapour) Result: negative

Propane:

Effects on fertility	:	Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test Species: Rat Application Route: inhalation (gas) Method: OECD Test Guideline 422

Result: negative

Effects on foetal development : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
Species: Rat
Application Route: inhalation (gas)
Method: OECD Test Guideline 422
Result: negative

n-Hexane:

Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

STOT - single exposure

May cause drowsiness or dizziness.

Components:

Dimethyl ether:

Assessment: May cause drowsiness or dizziness.

Isobutane:

Assessment: May cause drowsiness or dizziness.

Methyl acetate:

Assessment: May cause drowsiness or dizziness.

Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane:

Assessment: May cause drowsiness or dizziness.

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics:

Assessment: May cause drowsiness or dizziness.

Solvent naphtha (petroleum), light arom.:

Assessment: May cause drowsiness or dizziness.

Assessment: May cause respiratory irritation.

Propane:

Assessment: May cause drowsiness or dizziness.

n-Hexane:

Assessment: May cause drowsiness or dizziness.

STOT - repeated exposure

Not classified based on available information.

Components:

n-Hexane:

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

Repeated dose toxicity

Components:

Isobutane:

Species: Rat
NOAEL: 9000 ppm
Application Route: inhalation (gas)
Exposure time: 6 Weeks
Method: OECD Test Guideline 422

Methyl acetate:

Species: Rat
NOAEL: 1.057 mg/l
Application Route: inhalation (dust/mist/fume)
Exposure time: 28 Days
Method: OECD Test Guideline 412

Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane:

Species: Rat
NOAEL: > 20 mg/l
Application Route: inhalation (vapour)
Exposure time: 13 Weeks

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics:

Species: Rat
NOAEL: 12.47 mg/l
Application Route: Inhalation
Exposure time: 90 Days
Remarks: Based on data from similar materials

Solvent naphtha (petroleum), light arom.:

Species: Rat, female
NOAEL: 900 mg/m3
Application Route: inhalation (vapour)
Exposure time: 12 Months
Remarks: Based on data from similar materials

Propane:

Species: Rat
NOAEL: 7.214 mg/l
Application Route: inhalation (gas)
Exposure time: 6 Weeks
Method: OECD Test Guideline 422

n-Hexane:

Species: Rat
LOAEL: 10.6 mg/l
Application Route: inhalation (vapour)
Exposure time: 16 Weeks

Aspiration toxicity

Not classified based on available information.

Components:

Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane:

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics:

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Solvent naphtha (petroleum), light arom.:

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

n-Hexane:

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Experience with human exposure

Components:

n-Hexane:

Inhalation	:	Target Organs: Central nervous system

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Dimethyl ether:

Toxicity to fish	:	LC50 (Poecilia reticulata (guppy)): > 4.1 g/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 4.4 g/l Exposure time: 48 h
Toxicity to microorganisms	:	EC10 (Pseudomonas putida): > 1,600 mg/l

Methyl acetate:

Toxicity to fish	:	LC50 (Brachydanio rerio (zebrafish)): 250 - 350 mg/l

		Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 1,026.7 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae	:	EC50 (Desmodesmus subspicatus (green algae)): > 120 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
Toxicity to microorganisms	:	EC50 (Pseudomonas putida): 6,000 mg/l Exposure time: 16 h

Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane:

Toxicity to fish	:	LL50 (Pimephales promelas (fathead minnow)): 8.2 mg/l Exposure time: 96 h Test substance: Water Accommodated Fraction
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 4.5 mg/l Exposure time: 48 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 202 Remarks: Based on data from similar materials
Toxicity to algae	:	EL50 (Pseudokirchneriella subcapitata (green algae)): 3.1 mg/l Exposure time: 72 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 201 Remarks: Based on data from similar materials NOELR (Pseudokirchneriella subcapitata (green algae)): 0.5 mg/l Exposure time: 72 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 201 Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOELR (Daphnia magna (Water flea)): 2.6 mg/l Exposure time: 21 d Method: OECD Test Guideline 211

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics:

Toxicity to fish	:	LL50 (Oncorhynchus mykiss (rainbow trout)): > 13.4 mg/l Exposure time: 96 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 203 Remarks: No toxicity at the limit of solubility
Toxicity to daphnia and other aquatic invertebrates	:	EL50 (Daphnia magna (Water flea)): 3 mg/l Exposure time: 48 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 202 Remarks: Based on data from similar materials

Toxicity to algae	:	EL50 (Selenastrum capricornutum (green algae)): > 10 - 100 mg/l Exposure time: 72 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 201 Remarks: Based on data from similar materials NOELR (Selenastrum capricornutum (green algae)): 0.1 mg/l Exposure time: 72 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 201 Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 0.17 mg/l Exposure time: 21 d Test substance: Water Accommodated Fraction Method: OECD Test Guideline 211 Remarks: Based on data from similar materials

Solvent naphtha (petroleum), light arom.:

Toxicity to fish	:	LL50 (Oncorhynchus mykiss (rainbow trout)): 9.2 mg/l Exposure time: 96 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EL50 (Daphnia magna (Water flea)): 3.2 mg/l Exposure time: 48 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 202
Toxicity to algae	:	EL50 (Pseudokirchneriella subcapitata (green algae)): 7.9 mg/l Exposure time: 72 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 201 NOELR (Pseudokirchneriella subcapitata (green algae)): 0.22 mg/l Exposure time: 72 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 201
Toxicity to microorganisms	:	EC50: > 99 mg/l Exposure time: 10 min

n-Hexane:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 2.5 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 3.88 mg/l Exposure time: 48 h
Toxicity to algae	:	EC50 (Pseudokirchneriella subcapitata (green algae)): 55 mg/l Exposure time: 72 h

Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

Persistence and degradability

Components:

Dimethyl ether:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 5 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

Isobutane:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 100 %
Exposure time: 385.5 h
Remarks: Based on data from similar materials

Methyl acetate:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 70 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 77.05 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics:

Biodegradability : Result: Readily biodegradable.
Method: OECD Test Guideline 301F
Remarks: Based on data from similar materials

Solvent naphtha (petroleum), light arom.:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 78 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

Propane:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 100 %
Exposure time: 385.5 h
Remarks: Based on data from similar materials

n-Hexane:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 98 %

Exposure time: 28 d
Remarks: Based on data from similar materials

Bioaccumulative potential

Components:

Dimethyl ether:

Partition coefficient: n-octanol/water : log Pow: 0.2

Isobutane:

Partition coefficient: n-octanol/water : log Pow: 2.8

Methyl acetate:

Partition coefficient: n-octanol/water : log Pow: 0.18

Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane:

Partition coefficient: n-octanol/water : log Pow: 4
Remarks: Based on data from similar materials

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics:

Partition coefficient: n-octanol/water : log Pow: > 4
Remarks: Based on data from similar materials

Solvent naphtha (petroleum), light arom.:

Partition coefficient: n-octanol/water : log Pow: 3.7 - 4.5

n-Hexane:

Partition coefficient: n-octanol/water : log Pow: 4

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with local regulations.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.
Empty containers retain residue and can be dangerous.
Do not pressurize, cut, weld, braze, solder, drill, grind, or ex-

pose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury and/or death. If not otherwise specified: Dispose of as unused product. Please ensure aerosol cans are sprayed completely empty (including propellant)

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number	:	UN 1950
Proper shipping name	:	AEROSOLS
Class	:	2.1
Packing group	:	Not assigned by regulation
Labels	:	2.1

IATA-DGR

UN/ID No.	:	UN 1950
Proper shipping name	:	Aerosols, flammable
Class	:	2.1
Packing group	:	Not assigned by regulation
Labels	:	Flammable Gas
Packing instruction (cargo aircraft)	:	203
Packing instruction (passenger aircraft)	:	203

IMDG-Code

UN number	:	UN 1950
Proper shipping name	:	AEROSOLS
Class	:	2.1
Packing group	:	Not assigned by regulation
Labels	:	2.1
EmS Code	:	F-D, S-U
Marine pollutant	:	no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

ADG

UN number	:	UN 1950
Proper shipping name	:	AEROSOLS
Class	:	2.1
Packing group	:	Not assigned by regulation
Labels	:	2.1
Hazchem Code	:	2YE

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

Standard for the Uniform	:	No poison schedule number allocated

Scheduling of Medicines and Poisons

Prohibition/Licensing Requirements : There is no applicable prohibition or notification/licensing requirements, including for carcinogens under Commonwealth, State or Territory legislation.

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

AICS : All ingredients listed or exempt.

SECTION 16. OTHER INFORMATION

Further information

Sources of key data used to compile the Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, http://echa.europa.eu/

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

Date format : dd.mm.yyyy

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	:	ACGIH - Biological Exposure Indices (BEI)
AU OEL	:	Australia. Workplace Exposure Standards for Airborne Contaminants.
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
ACGIH / C	:	Ceiling limit
AU OEL / TWA	:	Exposure standard - time weighted average
AU OEL / STEL	:	Exposure standard - short term exposure limit

AICS - Australian Inventory of Chemical Substances; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; CPR - Controlled Products Regulations; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; 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; 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 Pre-

vention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; 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; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; 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; WHMIS - Workplace Hazardous Materials Information System

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

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