SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name or designation of the mixture	LPS® Micro-X
Registration number	-
Synonyms	None.
Part Number	04555, M04555
Issue date	28-July-2014
Version number	01

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses	A fast drying industrial cleaning solvent designed to remove soil and other contaminants.
Uses advised against	None known.

1.3. Details of the supplier of the safety data sheet

Supplier	Geocel Limited
Company name	Western Wood Way, Langage Science Park, Plympton,
Address	Plymouth, PL7 5BG United Kingdom
Telephone	+44 (0)1752 202060 / +44 (0)1752 334384
In Case of Emergency	+001 703-527-3887
Manufacturer	
Company name	LPS Laboratories, a division of Illinois Tool Works, Inc.
Address	4647 Hugh Howell Rd., Tucker, GA 30084 (U.S.A.)
Website	http://www.lpslabs.com
e-mail	sds@lpslabs.com

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Directive 67/548/EEC or 1999/45/EC as amended

Classification	F;R11, Xn;R65, Xi;R36-38, R67, N;R51/53

The full text for all R-phrases is displayed in section 16.

Classification according to Regulation (EC) No 1272/2008 as amended

Physical hazards		
Flammable liquids	Category 2	H225 - Highly flammable liquid and vapour.
Health hazards		
Skin corrosion/irritation	Category 2	H315 - Causes skin irritation.
Serious eye damage/eye irritation	Category 2	H319 - Causes serious eye irritation.
Reproductive toxicity	Category 2	H361 - Suspected of damaging fertility or the unborn child.
Specific target organ toxicity - single exposure	Category 3 narcotic effects	H336 - May cause drowsiness or dizziness.
Specific target organ toxicity - repeated exposure (inhalation)	Category 2 (nervous system)	H373 - May cause damage to organs (nervous system) through prolonged or repeated exposure by inhalation.
Aspiration hazard	Category 1	H304 - May be fatal if swallowed and enters airways.
Environmental hazards		
Hazardous to the aquatic environment, long-term aquatic hazard	Category 2	H411 - Toxic to aquatic life with long lasting effects.

Hazard summary

Physical hazards Highly flammable.

Health hazards May impair fertility. May cause harm to the unborn child. Irritating to eyes. Irritating to skin. Also harmful: may cause lung damage if swallowed. Vapours may cause drowsiness and dizziness. Occupational exposure to the substance or mixture may cause adverse health effects.

Environmental hazards Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Specific hazards Highly flammable. In use, may form flammable/explosive vapour-air mixture. May cause central nervous system effects. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Irritating to eyes and skin. Harmful if swallowed. May impair fertility. May cause harm to the unborn child. Prolonged exposure may cause chronic effects.

Main symptoms Vapours have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Narcosis. Decrease in motor functions. Behavioural changes. Irritating to eyes, respiratory system and skin. Symptoms may include redness, oedema, drying, defatting and cracking of the skin. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: 2,2-Dimethylbutane, 2,3-Dimethylbutane, 2-Methylpentane, 3-Methylpentane, Isopropanol, N-HEXANE

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.
H361	Suspected of damaging fertility or the unborn child.
H373	May cause damage to organs (nervous system) through prolonged or repeated exposure by inhalation.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
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 mist or vapour.
P264	Wash thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Response

P370 + P378	In case of fire: Use appropriate media for extinction.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTRE 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	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
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.
P312	Call a POISON CENTRE or doctor/physician if you feel unwell.
P321	Specific treatment (see this label).
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.
P391	Collect spillage.
P352	Wash with plenty of soap and water.

Storage

P235	Keep cool.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

Disposal

P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental label information 11,62 % of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

2.3. Other hazards None known.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
2-Methylpentane	40 - 50	107-83-5 203-523-4	-	601-007-00-7	
Classification: **DSD:**	F;R11, Xn;R65, Xi;R38, R67, N;R51/53				C
CLP:	Flam. Liq. 2;H225, Asp. Tox. 1;H304, Skin Irrit. 2;H315, STOT SE 3;H336, Aquatic Chronic 2;H411				C
2,3-Dimethylbutane	10 - 20	79-29-8 201-193-6	-	601-007-00-7	
Classification: **DSD:**	F;R11, Xn;R65, Xi;R38, R67, N;R51/53				C
CLP:	Flam. Liq. 2;H225, Asp. Tox. 1;H304, Skin Irrit. 2;H315, STOT SE 3;H336, Aquatic Chronic 2;H411				C
3-Methylpentane	10 - 20	96-14-0 202-481-4	-	601-007-00-7	
Classification: **DSD:**	F;R11, Xn;R65, Xi;R38, R67, N;R51/53				C
CLP:	Flam. Liq. 2;H225, Asp. Tox. 1;H304, Skin Irrit. 2;H315, STOT SE 3;H336, Aquatic Chronic 2;H411				C
Isopropanol	5 - 15	67-63-0 200-661-7	-	603-117-00-0	
Classification: **DSD:**	F;R11, Xi;R36, R67				
CLP:	Flam. Liq. 2;H225, Eye Irrit. 2;H319, STOT SE 3;H336				
2,2-Dimethylbutane	1 - 10	75-83-2 200-906-8	-	601-007-00-7	
Classification: **DSD:**	F;R11, Xn;R65, Xi;R38, R67, N;R51/53				C
CLP:	Flam. Liq. 2;H225, Asp. Tox. 1;H304, Skin Irrit. 2;H315, STOT SE 3;H336, Aquatic Chronic 2;H411				C
N-HEXANE	< 3	110-54-3 203-777-6	-	601-037-00-0	#
Classification: **DSD:**	F;R11, Repr. Cat. 3;R62, Xn;R65-48/20, Xi;R38, R67, N;R51/53				
CLP:	Flam. Liq. 2;H225, Asp. Tox. 1;H304, Skin Irrit. 2;H315, STOT SE 3;H336, Repr. 2;H361f, STOT RE 2;H373, Aquatic Chronic 2;H411				

CLP: Regulation No. 1272/2008.
DSD: Directive 67/548/EEC.
M: M-factor
vPvB: very persistent and very bioaccumulative substance.
PBT: persistent, bioaccumulative and toxic substance.
#: This substance has been assigned Community workplace exposure limit(s).
Note C: Some organic substances may be marketed either in a specific isomeric form or as a mixture of several isomers. In this case the supplier must state on the label whether the substance is a specific isomer or a mixture of isomers.

Composition comments The full text for all R- and H-phrases is displayed in section 16.

SECTION 4: First aid measures

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Wash contaminated clothing before reuse.

4.1. Description of first aid measures

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician if symptoms develop or persist.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation develops and persists.

Eye contact Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Call a physician or Poison Control Centre immediately.

Ingestion Call a physician or poison control centre immediately. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconsious person. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

4.2. Most important symptoms and effects, both acute and delayed Irritation of eyes and mucous membranes. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Defatting of the skin. Vapours have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Narcosis. Behavioural changes. Prolonged exposure may cause chronic effects.

4.3. Indication of any immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

SECTION 5: Firefighting measures

General fire hazards Highly flammable liquid and vapour.

5.1. Extinguishing media

Suitable extinguishing media Alcohol resistant foam. Water fog. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture By heating and fire, harmful vapours/gases may be formed. Vapours may form explosive mixtures with air. Vapours may travel considerable distance to a source of ignition and flash back.

5.3. Advice for firefighters

Special protective equipment for firefighters Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Structural firefighters protective clothing will only provide limited protection.

Special fire fighting procedures In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Water runoff can cause environmental damage.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials. Move container from fire area if it can be done without risk. In the event of fire and/or explosion do not breathe fumes.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate personal protective equipment. Do not touch or walk through spilled material. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. Use personal protection recommended in Section 8 of the SDS.

For emergency responders Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

6.2. Environmental precautions Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil etc) away from spilled material.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Use foam to blanket spilled material. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills in original containers for re-use.

6.4. Reference to other sections

Use personal protection recommended in Section 8 of the SDS. For waste disposal, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Vapours may form explosive mixtures with air. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Do not smoke.

Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment.

Avoid breathing mist or vapour. Avoid contact with skin. Avoid contact with eyes. Avoid prolonged exposure.

Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Wash hands thoroughly after handling. Avoid release to the environment. Do not empty into drains.

7.2. Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques.

Keep container tightly closed. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Keep in an area equipped with sprinklers.

7.3. Specific end use(s)

Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Austria. MAK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001

Components	Type	Value
2,2-Dimethylbutane (CAS 75-83-2)	MAK	715 mg/m3
		200 ppm
	STEL	2860 mg/m3
		800 ppm
2,3-Dimethylbutane (CAS 79-29-8)	MAK	715 mg/m3
		200 ppm
	STEL	2860 mg/m3
		800 ppm
2-Methylpentane (CAS 107-83-5)	MAK	715 mg/m3
		200 ppm
	STEL	2860 mg/m3
		800 ppm
3-Methylpentane (CAS 96-14-0)	MAK	715 mg/m3
		200 ppm
	STEL	2860 mg/m3
		800 ppm
Isopropanol (CAS 67-63-0)	MAK	500 mg/m3
		200 ppm
	STEL	2000 mg/m3
		800 ppm
N-HEXANE (CAS 110-54-3)	MAK	72 mg/m3
		20 ppm
	STEL	288 mg/m3

Austria. MAK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001

Components	Type	Value
		80 ppm

Belgium. Exposure Limit Values.

Components	Type	Value
Isopropanol (CAS 67-63-0)	STEL	1000 mg/m3
		400 ppm
	TWA	500 mg/m3
		200 ppm
N-HEXANE (CAS 110-54-3)	TWA	72 mg/m3
		20 ppm

Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work

Components	Type	Value
Isopropanol (CAS 67-63-0)	STEL	1225 mg/m3
	TWA	980 mg/m3
N-HEXANE (CAS 110-54-3)	TWA	72 mg/m3
		20 ppm

Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 13/09

Components	Type	Value
Isopropanol (CAS 67-63-0)	MAC	999 mg/m3
		400 ppm
	STEL	1250 mg/m3
		500 ppm
N-HEXANE (CAS 110-54-3)	MAC	72 mg/m3
		20 ppm

Cyprus. OELs. Control of factory atmosphere and dangerous substances in factories regulation, PI 311/73, as amended.

Components	Type	Value
Isopropanol (CAS 67-63-0)	TWA	980 mg/m3
		400 ppm

Czech Republic. OELs. Government Decree 361

Components	Type	Value
Isopropanol (CAS 67-63-0)	Ceiling	1000 mg/m3
	TWA	500 mg/m3
N-HEXANE (CAS 110-54-3)	Ceiling	200 mg/m3
	TWA	70 mg/m3

Denmark. Exposure Limit Values

Components	Type	Value
Isopropanol (CAS 67-63-0)	TLV	490 mg/m3
		200 ppm
N-HEXANE (CAS 110-54-3)	TLV	72 mg/m3
		20 ppm

Estonia. OELs. Occupational Exposure Limits of Hazardous Substances. (Annex of Regulation No. 293 of 18 September 2001)

Components	Type	Value
Isopropanol (CAS 67-63-0)	STEL	600 mg/m3
		250 ppm
	TWA	350 mg/m3
		150 ppm
N-HEXANE (CAS 110-54-3)	TWA	72 mg/m3
		20 ppm

Finland. Workplace Exposure Limits

Components	Type	Value
2,2-Dimethylbutane (CAS 75-83-2)	STEL	2300 mg/m3
		630 ppm
	TWA	1800 mg/m3
		500 ppm

Finland. Workplace Exposure Limits

Components	Type	Value
2,3-Dimethylbutane (CAS 79-29-8)	STEL	2300 mg/m3
		630 ppm
	TWA	1800 mg/m3
		500 ppm
2-Methylpentane (CAS 107-83-5)	STEL	2300 mg/m3
		630 ppm
	TWA	1800 mg/m3
		500 ppm
3-Methylpentane (CAS 96-14-0)	STEL	2300 mg/m3
		630 ppm
	TWA	1800 mg/m3
		500 ppm
Isopropanol (CAS 67-63-0)	STEL	620 mg/m3
		250 ppm
	TWA	500 mg/m3
		200 ppm
N-HEXANE (CAS 110-54-3)	STEL	2300 mg/m3
		630 ppm
	TWA	72 mg/m3
		20 ppm

France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984

Components	Type	Value	Form
Isopropanol (CAS 67-63-0)	VLE	980 mg/m3	
		400 ppm	
N-HEXANE (CAS 110-54-3)	VLE	1500 mg/m3	Vapor.
	VME	72 mg/m3	
		20 ppm	

Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG)

Components	Type	Value
Isopropanol (CAS 67-63-0)	TWA	500 mg/m3
		200 ppm
N-HEXANE (CAS 110-54-3)	TWA	180 mg/m3
		50 ppm

Germany. TRGS 900, Limit Values in the Ambient Air at the Workplace

Components	Type	Value
2,2-Dimethylbutane (CAS 75-83-2)	AGW	1800 mg/m3
		500 ppm
2,3-Dimethylbutane (CAS 79-29-8)	AGW	1800 mg/m3
		500 ppm
2-Methylpentane (CAS 107-83-5)	AGW	1800 mg/m3
		500 ppm
3-Methylpentane (CAS 96-14-0)	AGW	1800 mg/m3
		500 ppm
Isopropanol (CAS 67-63-0)	AGW	500 mg/m3
		200 ppm
N-HEXANE (CAS 110-54-3)	AGW	180 mg/m3
		50 ppm

Greece. OELs (Decree No. 90/1999, as amended)

Components	Type	Value
Isopropanol (CAS 67-63-0)	STEL	1225 mg/m3
		500 ppm
	TWA	980 mg/m3
		400 ppm

Greece. OELs (Decree No. 90/1999, as amended)

Components	Type	Value
N-HEXANE (CAS 110-54-3)	TWA	180 mg/m3 50 ppm

Hungary. OELs. Joint Decree on Chemical Safety of Workplaces

Components	Type	Value
Isopropanol (CAS 67-63-0)	STEL	2000 mg/m3
	TWA	500 mg/m3
N-HEXANE (CAS 110-54-3)	TWA	72 mg/m3

Iceland. OELs. Regulation 154/1999 on occupational exposure limits

Components	Type	Value
Isopropanol (CAS 67-63-0)	TWA	490 mg/m3 200 ppm
N-HEXANE (CAS 110-54-3)	TWA	90 mg/m3 25 ppm

Ireland. Occupational Exposure Limits

Components	Type	Value
Isopropanol (CAS 67-63-0)	STEL	400 ppm
	TWA	200 ppm
N-HEXANE (CAS 110-54-3)	TWA	72 mg/m3 20 ppm

Italy. Occupational Exposure Limits

Components	Type	Value
2,2-Dimethylbutane (CAS 75-83-2)	STEL	1000 ppm
	TWA	500 ppm
2,3-Dimethylbutane (CAS 79-29-8)	STEL	1000 ppm
	TWA	500 ppm
2-Methylpentane (CAS 107-83-5)	STEL	1000 ppm
	TWA	500 ppm
3-Methylpentane (CAS 96-14-0)	STEL	1000 ppm
	TWA	500 ppm
Isopropanol (CAS 67-63-0)	STEL	400 ppm
	TWA	200 ppm
N-HEXANE (CAS 110-54-3)	TWA	72 mg/m3 20 ppm

Latvia. OELs. Occupational exposure limit values of chemical substances in work environment

Components	Type	Value
Isopropanol (CAS 67-63-0)	STEL	600 mg/m3
	TWA	350 mg/m3
N-HEXANE (CAS 110-54-3)	STEL	300 mg/m3
	TWA	72 mg/m3 20 ppm

Lithuania. OELs. Limit Values for Chemical Substances, General Requirements

Components	Type	Value
Isopropanol (CAS 67-63-0)	STEL	600 mg/m3 250 ppm
	TWA	350 mg/m3 150 ppm
N-HEXANE (CAS 110-54-3)	TWA	72 mg/m3 20 ppm

Luxembourg. Binding Occupational exposure limit values (Annex I), Memorial A

Components	Type	Value
N-HEXANE (CAS 110-54-3)	TWA	72 mg/m3 20 ppm

Malta. OELs. Occupational Exposure Limit Values (L.N. 227. of Occupational Health and Safety Authority Act (CAP. 424), Schedules I and V)

Components	Type	Value
N-HEXANE (CAS 110-54-3)	TWA	72 mg/m3 20 ppm

Netherlands. OELs (binding)

Components	Type	Value
N-HEXANE (CAS 110-54-3)	STEL	144 mg/m3
	TWA	72 mg/m3

Norway. Administrative Norms for Contaminants in the Workplace

Components	Type	Value
Isopropanol (CAS 67-63-0)	TLV	245 mg/m3 100 ppm
N-HEXANE (CAS 110-54-3)	TLV	72 mg/m3 20 ppm

Poland. MACs. Minister of Labour and Social Policy Regarding Maximum Allowable Concentrations and Intensities in Working Environment

Components	Type	Value
Isopropanol (CAS 67-63-0)	STEL	1200 mg/m3
	TWA	900 mg/m3
N-HEXANE (CAS 110-54-3)	TWA	72 mg/m3

Portugal. OELs. Decree-Law n. 290/2001 (Journal of the Republic - 1 Series A, n.266)

Components	Type	Value
N-HEXANE (CAS 110-54-3)	TWA	72 mg/m3 20 ppm

Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)

Components	Type	Value
Isopropanol (CAS 67-63-0)	STEL	400 ppm
	TWA	200 ppm
N-HEXANE (CAS 110-54-3)	TWA	50 ppm

Romania. OELs. Protection of workers from exposure to chemical agents at the workplace

Components	Type	Value
Isopropanol (CAS 67-63-0)	STEL	500 mg/m3 203 ppm
	TWA	200 mg/m3 81 ppm
N-HEXANE (CAS 110-54-3)	TWA	72 mg/m3 20 ppm

Slovakia. OELs. Regulation No. 300/2007 concerning protection of health in work with chemical agents

Components	Type	Value
Isopropanol (CAS 67-63-0)	STEL	1000 mg/m3 400 ppm
	TWA	500 mg/m3 200 ppm
N-HEXANE (CAS 110-54-3)	STEL	140 mg/m3 40 ppm
	TWA	72 mg/m3 20 ppm

Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)

Components	Type	Value
2,2-Dimethylbutane (CAS 75-83-2)	TWA	720 mg/m3 200 ppm
2,3-Dimethylbutane (CAS 79-29-8)	TWA	720 mg/m3 200 ppm
2-Methylpentane (CAS 107-83-5)	TWA	720 mg/m3

Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)

Components	Type	Value
		200 ppm
3-Methylpentane (CAS 96-14-0)	TWA	720 mg/m3
		200 ppm
Isopropanol (CAS 67-63-0)	TWA	500 mg/m3
		200 ppm
N-HEXANE (CAS 110-54-3)	TWA	72 mg/m3
		20 ppm

Spain. Occupational Exposure Limits

Components	Type	Value
Isopropanol (CAS 67-63-0)	STEL	1000 mg/m3
		400 ppm
	TWA	500 mg/m3
		200 ppm
N-HEXANE (CAS 110-54-3)	TWA	72 mg/m3
		20 ppm

Sweden. Occupational Exposure Limit Values

Components	Type	Value
2,2-Dimethylbutane (CAS 75-83-2)	STEL	1100 mg/m3
		300 ppm
	TWA	700 mg/m3
		200 ppm
2,3-Dimethylbutane (CAS 79-29-8)	STEL	1100 mg/m3
		300 ppm
	TWA	700 mg/m3
		200 ppm
2-Methylpentane (CAS 107-83-5)	STEL	1100 mg/m3
		300 ppm
	TWA	700 mg/m3
		200 ppm
3-Methylpentane (CAS 96-14-0)	STEL	1100 mg/m3
		300 ppm
	TWA	700 mg/m3
		200 ppm
Isopropanol (CAS 67-63-0)	STEL	600 mg/m3
		250 ppm
	TWA	350 mg/m3
		150 ppm
N-HEXANE (CAS 110-54-3)	STEL	180 mg/m3
		50 ppm
	TWA	90 mg/m3
		25 ppm

Switzerland. SUVA Grenzwerte am Arbeitsplatz

Components	Type	Value
2,2-Dimethylbutane (CAS 75-83-2)	STEL	3600 mg/m3
		1000 ppm
	TWA	1800 mg/m3
		500 ppm
2,3-Dimethylbutane (CAS 79-29-8)	STEL	3600 mg/m3
		1000 ppm
	TWA	1800 mg/m3
		500 ppm
2-Methylpentane (CAS 107-83-5)	STEL	3600 mg/m3
		1000 ppm

Switzerland. SUVA Grenzwerte am Arbeitsplatz

Components	Type	Value
	TWA	1800 mg/m3 500 ppm
3-Methylpentane (CAS 96-14-0)	STEL	3600 mg/m3 1000 ppm
	TWA	1800 mg/m3 500 ppm
Isopropanol (CAS 67-63-0)	STEL	1000 mg/m3 400 ppm
	TWA	500 mg/m3 200 ppm
N-HEXANE (CAS 110-54-3)	STEL	1440 mg/m3 400 ppm
	TWA	180 mg/m3 50 ppm

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value
Isopropanol (CAS 67-63-0)	STEL	1250 mg/m3 500 ppm
	TWA	999 mg/m3 400 ppm
N-HEXANE (CAS 110-54-3)	TWA	72 mg/m3 20 ppm

EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU

Components	Type	Value
N-HEXANE (CAS 110-54-3)	TWA	72 mg/m3 20 ppm

Biological limit values

France. Biological indicators of exposure (IBE) (National Institute for Research and Security (INRS, ND 2065)

Components	Value	Determinant	Specimen	Sampling time
N-HEXANE (CAS 110-54-3)	5 mg/g	2,5-Hexanedione	Creatinine in urine	*

* - For sampling details, please see the source document.

Germany. TRGS 903, BAT List (Biological Limit Values)

Components	Value	Determinant	Specimen	Sampling time
Isopropanol (CAS 67-63-0)	25 mg/l	Aceton	Urine	*
	25 mg/l	Aceton	Blood	*
N-HEXANE (CAS 110-54-3)	5 mg/l	2,5-Hexandion plus 4,5-Dihydroxy-2-hexanon	Urine	*

* - For sampling details, please see the source document.

Hungary. Chemical Safety at Workplace Ordinance Joint Decree No. 25/2000 (Annex 2): Permissible limit values of biological exposure (effect) indices

Components	Value	Determinant	Specimen	Sampling time
N-HEXANE (CAS 110-54-3)	3,5 mg/g	hexane-2,5-dion	Creatinine in urine	*
	3,5 µmol/mmol	hexane-2,5-dion	Creatinine in urine	*

* - For sampling details, please see the source document.

Slovakia. BLVs (Biological Limit Value). Regulation no. 355/2006 concerning protection of workers exposed to chemical agents, Annex 2

Components	Value	Determinant	Specimen	Sampling time
N-HEXANE (CAS 110-54-3)	3 mg/g	2,5-hexanedione and 4,5-dihydroxy-2-hexanone	Creatinine in urine	*

Slovakia. BLVs (Biological Limit Value). Regulation no. 355/2006 concerning protection of workers exposed to chemical agents, Annex 2

Components	Value	Determinant	Specimen	Sampling time
	5 mg/l	2,5-hexanedione and 4,5-dihydroxy-2-hexanone	Urine	*

* - For sampling details, please see the source document.

Spain. Biological Limit Values (VLBs), Occupational Exposure Limits for Chemical Agents, Table 4

Components	Value	Determinant	Specimen	Sampling time
Isopropanol (CAS 67-63-0)	40 mg/l	Acetona	Urine	*
N-HEXANE (CAS 110-54-3)	0,4 mg/l	2,5-Hexanodiona, sin hidrólisis	Urine	*

* - For sampling details, please see the source document.

Switzerland. BAT-Werte (Biological Limit Values in the Workplace as per SUVA)

Components	Value	Determinant	Specimen	Sampling time
Isopropanol (CAS 67-63-0)	25 mg/l	Aceton	Urine	*
	25 mg/l	Aceton	Blood	*
N-HEXANE (CAS 110-54-3)	5 mg/l	2,5-Hexandion plus 4,5-Dihydroxy-2-hexanon	Urine	*

* - For sampling details, please see the source document.

Recommended monitoring procedures Follow standard monitoring procedures.

Derived no-effect level (DNEL) Not available.

Predicted no effect concentrations (PNECs) Not available.

8.2. Exposure controls

Appropriate engineering controls Explosion-proof general and local exhaust ventilation. Provide eyewash station.

Individual protection measures, such as personal protective equipment

General information Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection Wear safety glasses with side shields (or goggles). Eye wash fountain is recommended.

Skin protection

- Hand protection For prolonged or repeated skin contact use suitable protective gloves. Chemical resistant gloves are recommended.

- Other Avoid contact with the skin. Wear appropriate chemical resistant clothing. Chemical resistant gloves.

Respiratory protection No personal respiratory protective equipment normally required. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.

Thermal hazards None known.

Hygiene measures When using do not smoke. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Environmental exposure controls Contain spills and prevent releases and observe national regulations on emissions. Environmental manager must be informed of all major releases.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance Liquid.

Physical state Liquid.

Form Liquid.

Colour Clear water-white

Odour Solvent.

Odour threshold Not available.

pH Not available.

Melting point/freezing point	Not available.
Initial boiling point and boiling range	60,5 °C (140,9 °F)
Flash point	< -17,0 °C (< 1,4 °F) Tag closed cup
Evaporation rate	< 1 (Ethyl Ether = 1)
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	0,6 %
Flammability limit - upper (%)	7 %
Vapour pressure	352,53 mm Hg @ 38ºC
Vapour density	~3 (air = 1)
Relative density	Not available.
Solubility(ies)	
Solubility (water)	< 10 % w/w
Solubility (other)	Not available.
Partition coefficient (n-octanol/water)	> 1
Auto-ignition temperature	306 °C (582,8 °F)
Decomposition temperature	Not available.
Viscosity	< 3 cSt @ 25ºC
Explosive properties	Not available.
Oxidizing properties	Not available.
9.2. Other information	
Heat of combustion	> 30 kJ/g
Percent volatile	100 %
Specific gravity	0,64 - 0,67 @ 20ºC
VOC (Weight %)	100 % per US State and Federal Consumer Product Regulations; 669 g/L per SCAQMD Rule 102

SECTION 10: Stability and reactivity

10.1. Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport. Avoid contact with oxidising agents (e.g. nitric acid, peroxides and chromates).
10.2. Chemical stability	Instability caused by elevated temperatures. Risk of ignition.
10.3. Possibility of hazardous reactions	Hazardous polymerisation does not occur.
10.4. Conditions to avoid	Heat, flames and sparks. Avoid temperatures exceeding the flash point.
10.5. Incompatible materials	Strong oxidising agents. Isocyanates Acids. Chlorine.
10.6. Hazardous decomposition products	Carbon oxides.

SECTION 11: Toxicological information

General information	Occupational exposure to the substance or mixture may cause adverse effects.
Information on likely routes of exposure	
Ingestion	May be fatal if swallowed and enters airways.
Inhalation	Vapours have a narcotic effect and may cause headache, fatigue, dizziness and nausea.
Skin contact	Causes skin irritation. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
Eye contact	Causes serious eye irritation.
Symptoms	Skin irritation. Defatting of the skin. Irritating to eyes and respiratory system. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Vapours have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.
11.1. Information on toxicological effects	
Acute toxicity	Narcotic effects. May be fatal if swallowed and enters airways.

Components	Species	Test results
Isopropanol (CAS 67-63-0)		
Acute		
Dermal		
LD50	Rabbit	12800 mg/kg
		16,4 ml/kg
Inhalation		
LC50	Rat	> 10000 ppm
Oral		
LD50	Dog	4797 mg/kg
	Mouse	3600 mg/kg
	Rabbit	5,03 g/kg
	Rat	4,7 g/kg
Other		
LD50	Mouse	1509 mg/kg
	Rat	1099 mg/kg
N-HEXANE (CAS 110-54-3)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
		> 5 ml/kg
Inhalation		
LC50	Mouse	48000 mg/l, 4 Hours
	Rat	> 5000 ppm
		> 31,86 mg/l
Oral		
LD50	Rat	24 ml/kg
		24 mg/kg
	Wistar rat	49 mg/kg

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory sensitisation Not a respiratory sensitizer.

Skin sensitisation This product is not expected to cause skin sensitisation.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

ACGIH Carcinogens

Isopropanol (CAS 67-63-0) Not classifiable as a human carcinogen. A4

Reproductive toxicity Suspected of damaging fertility or the unborn child.

Specific target organ toxicity - single exposure Narcotic effects.

Specific target organ toxicity - repeated exposure Causes damage to organs (nervous system) through prolonged or repeated exposure by inhalation.

Aspiration hazard May be fatal if swallowed and enters airways.

Mixture versus substance information Not available.

Other information None known.

SECTION 12: Ecological information

12.1. Toxicity Toxic to aquatic life with long lasting effects.

Components		Species	Test results
Isopropanol (CAS 67-63-0)			
Aquatic			
Fish	LC50	Bluegill (Lepomis macrochirus)	> 1400 mg/l, 96 hours
N-HEXANE (CAS 110-54-3)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	2,101 - 2,981 mg/l, 96 hours

12.2. Persistence and degradability Not inherently biodegradable.

12.3. Bioaccumulative potential No data available for this product.

Partition coefficient n-octanol/water (log Kow)

LPS® Micro-X	> 1
2,2-Dimethylbutane	3,82
2,3-Dimethylbutane	3,42
2-Methylpentane	3,74
3-Methylpentane	3,6
Isopropanol	0,05
N-HEXANE	3,9

Bioconcentration factor (BCF) Not available.

12.4. Mobility in soil No data available.

12.5. Results of PBT and vPvB assessment Not available.

12.6. Other adverse effects None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

EU waste code The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Disposal methods/information Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14: Transport information

General IMDG Regulated Marine Pollutant.

ADR

14.1. UN number UN1993

14.2. UN proper shipping name FLAMMABLE LIQUID, N.O.S. (Hexanes and Isopropanol)

14.3. Transport hazard class(es)

Class 3

Subsidiary risk -

Label(s) 3

Hazard No. (ADR) 33

Tunnel restriction code D/E

14.4. Packing group II

14.5. Environmental hazards No

14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

RID

14.1. UN number UN1993

14.2. UN proper shipping name FLAMMABLE LIQUID, N.O.S. (Hexanes and Isopropanol)

14.3. Transport hazard class(es)

Class	3
Subsidiary risk	-
Label(s)	3
14.4. Packing group	II
14.5. Environmental hazards	No
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

ADN

14.1. UN number	UN1993
14.2. UN proper shipping name	FLAMMABLE LIQUID, N.O.S. (Hexanes and Isopropanol)

14.3. Transport hazard class(es)

Class	3
Subsidiary risk	-
Label(s)	3
14.4. Packing group	II
14.5. Environmental hazards	No
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IATA

14.1. UN number	UN1993
14.2. UN proper shipping name	Flammable liquid, n.o.s. (Hexanes and Isopropanol)

14.3. Transport hazard class(es)

Class	3
Subsidiary risk	-
14.4. Packing group	II
14.5. Environmental hazards	No
ERG Code	3H
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Other information

Passenger and cargo aircraft	Allowed.
Cargo aircraft only	Allowed.

**Note: drums cannot be shipped by air. Other pack sizes may be restricted to Cargo Aircraft Only. Check quantity limits before placing on passenger aircraft.

IMDG

14.1. UN number	UN1993
14.2. UN proper shipping name	FLAMMABLE LIQUID, N.O.S. (Hexanes and Isopropanol), MARINE POLLUTANT

14.3. Transport hazard class(es)

Class	3
Subsidiary risk	-
14.4. Packing group	II
14.5. Environmental hazards	
Marine pollutant	Yes
EmS	F-E, S-E
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	This substance/mixture is not intended to be transported in bulk.

ADN; ADR; IATA; IMDG; RID

Marine pollutant

General information IMDG Regulated Marine Pollutant.

SECTION 15: Regulatory information

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

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I

Not listed.

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex II

Not listed.

Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1 as amended

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2 as amended

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3 as amended

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(1) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

N-HEXANE (CAS 110-54-3)

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work

Not listed.

Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding

Not listed.

Other EU regulations

Directive 96/82/EC (Seveso II) on the control of major-accident hazards involving dangerous substances

Not listed.

Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

2,2-Dimethylbutane (CAS 75-83-2)

2,3-Dimethylbutane (CAS 79-29-8)
2-Methylpentane (CAS 107-83-5)
3-Methylpentane (CAS 96-14-0)
Isopropanol (CAS 67-63-0)
N-HEXANE (CAS 110-54-3)

Directive 94/33/EC on the protection of young people at work

N-HEXANE (CAS 110-54-3)

Other regulations	The product is classified and labelled in accordance with EC directives or respective national laws. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006.
National regulations	Not available.
15.2. Chemical safety assessment	No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations	Not available.
References	Not available.
Information on evaluation method leading to the classification of mixture	The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.
Full text of any statements or R-phrases and H-statements under Sections 2 to 15	R11 Highly flammable. R36 Irritating to eyes. R38 Irritating to skin. R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation. R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. R60 May impair fertility. R61 May cause harm to the unborn child. R62 Possible risk of impaired fertility. R65 Harmful: may cause lung damage if swallowed. R67 Vapours may cause drowsiness and dizziness. 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. H361f Suspected of damaging fertility. H373 May cause damage to organs through prolonged or repeated exposure. H411 Toxic to aquatic life with long lasting effects.
Revision information	This document has undergone significant changes and should be reviewed in its entirety.
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