



SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Issuing Date 08-24-2021

Revision Date 05-20-2022

Revision Number 4.1

1.1. Product identifier

Product Code(s) 1605
Product Name 1605 DUOLEC® INDUSTRIAL GEAR OIL

Pure substance/mixture Mixture

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

Identified uses No information available

Uses advised against No information available

1.3. Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor)

HH Compliance
Rubicon Centre,
CIT Campus,
Bishopstown,
Cork,
Ireland
T12 Y275
+353-21-4868121

Manufacturer

Lubrication Engineers Inc.
1919 E. Tulsa
Wichita, KS 67216
USA
800-537-7683

For further information, please contact

E-mail Address techsupport@le-inc.com

1.4. Emergency telephone number

Emergency Telephone CHEMTREC: +1-703-527-3887 (INTERNATIONAL)
1-800-424-9300 (NORTH AMERICA)

Emergency Telephone - §45 - (EC)1272/2008	
Europe	112
Austria	Vergiftungsinformationszentrale (AT): +43-(0)1-406 43 43
Belgium	Poison center (BE): +32 70 245 245
Denmark	Poison Control Hotline (DK): +45 82 12 12 12
Finland	Poison Information Centre (FI): +358 9 471 977
France	ORFILA (FR): + 01 45 42 59 59
Germany	Poison Center Berlin (DE): +49 030 30686 790
Ireland	National Poisons Information Centre (IE): +353 1 8379964
Italy	Poison Center, Milan (IT): +39 02 6610 1029
Netherlands	National Poisons Information Center (NL): +31 30 274 88 88 (NB: this service is only available to health professionals)
Norway	Poisons Information (NO): + 47 22 591300
Poland	Poison Control and Information Centre, Warsaw (PL): +48 22 619 66 54; +48 22 619 08 97
Portugal	Poison Information Center (PT): +351 21 330 3284
Spain	Poison Information Service (ES): +34 91 562 04 20
Sweden	Poisons Information Center (SV): +46 8 33 12 31
Switzerland	Poison Center: Tel 145; +41 44 251 51 51
United Kingdom	NHS Direct (UK): +44 0845 46 47

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Acute toxicity - Inhalation (Dusts/Mists)	Category 4 - (H332)
Chronic aquatic toxicity	Category 3 - (H412)

2.2. Label elements**Signal word**

Warning

Hazard statements

H332 - Harmful if inhaled

H412 - Harmful to aquatic life with long lasting effects

EUH208 - Contains Amines, C12-14-tert-alkyl May produce an allergic reaction.

Precautionary Statements - EU (§28, 1272/2008)

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray

P271 - Use only outdoors or in a well-ventilated area

P273 - Avoid release to the environment

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

P312 - Call a POISON CENTER or doctor if you feel unwell

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

2.3. Other hazards

Harmful to aquatic life.

3.1 Substances**3.2 Mixtures**

Chemical name	Weight-%	REACH registration number	EC No	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
Petroleum distillates, hydrotreated heavy paraffinic 64742-54-7	79.7	01-211948462 7-25	265-157-1	Not Classified	-	-	-
Mineral Oil 8042-47-5	0.4	01-211948707 8-27	232-455-8	Asp. Tox. 1 (H304)	-	-	-
Amines, C12-14-tert-alkyl 68955-53-3	0.2	No data available	273-279-1	Acute Tox. 4 (H302) Acute Tox. 3 (H311)	-	-	-

				Acute Tox. 2 (H330) Skin Corr. 1C (H314) Eye Dam. 1 (H318) Skin Sens. 1 (H317) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)			
Petroleum distillates, solvent-refined heavy paraffinic 64741-88-4	0.12	01-211948870 6-23	265-090-8	Not Classified	-	-	-
(Z)-octadec-9-enylamine 112-90-3	0.098	No data available	204-015-5	Acute Tox. 4 (H302) Skin Corr. 1B (H314) STOT RE 2 (H373) STOT SE 3 (H335) Asp. Tox. 1 (H304) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	-	10	10

The producer of "1605" declares that it contains less than 3% DMSO extractable material by IP-346

Full text of H- and EUH-phrases: see section 16

Acute Toxicity Estimate

No information available

This product does not contain candidate substances of very high concern at a concentration $\geq 0.1\%$ (Regulation (EC) No. 1907/2006 (REACH), Article 59)

4.1. Description of first aid measures

Inhalation	Remove to fresh air.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Skin contact	Wash skin with soap and water. In the case of skin irritation or allergic reactions see a physician.
Ingestion	Rinse mouth.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms	No information available.
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4.3. Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5.1. Extinguishing media

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical No information available.

5.3. Advice for firefighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Take up mechanically, placing in appropriate containers for disposal.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections See section 8 for more information. See section 13 for more information.

7.1. Precautions for safe handling

Advice on safe handling Ensure adequate ventilation.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place.

7.3. Specific end use(s)

Identified uses

8.1. Control parameters

Exposure Limits

Chemical name	European Union	Austria	Belgium	Bulgaria	Croatia
Petroleum distillates, hydrotreated heavy paraffinic 64742-54-7	-	-	TWA 5 mg/m ³ STEL 10 mg/m ³	TWA 5.0 mg/m ³	-
Mineral Oil 8042-47-5	-	-	TWA 5 mg/m ³ STEL 10 mg/m ³	TWA 5.0 mg/m ³	-
Petroleum distillates, solvent-refined heavy paraffinic 64741-88-4	-	-	TWA 5 mg/m ³ STEL 10 mg/m ³	TWA 5.0 mg/m ³	-
Chemical name	Cyprus	Czech Republic	Denmark	Estonia	Finland
Petroleum distillates, hydrotreated heavy paraffinic 64742-54-7	-	-	TWA 1 mg/m ³	-	TWA 5 mg/m ³
Mineral Oil 8042-47-5	-	-	TWA 1 mg/m ³	-	TWA 5 mg/m ³
Petroleum distillates, solvent-refined heavy paraffinic 64741-88-4	-	-	TWA 1 mg/m ³	-	TWA 5 mg/m ³
Chemical name	France	Germany	Germany MAK	Greece	Hungary
Petroleum distillates, hydrotreated heavy paraffinic 64742-54-7	-	-	-	TWA 5 mg/m ³	Rákkelto hatású Ceiling 5mg/m ³
Mineral Oil 8042-47-5	-	-	AGW 5 mg/m ³	TWA 5 mg/m ³	Rákkelto hatású Ceiling 5mg/m ³
Petroleum distillates, solvent-refined heavy paraffinic 64741-88-4	-	-	-	TWA 5 mg/m ³	Rákkelto hatású Ceiling 5mg/m ³
Chemical name	Ireland	Italy	Italy REL	Latvia	Lithuania
Petroleum distillates, hydrotreated heavy paraffinic 64742-54-7	TWA 5 ppm STEL 15 ppm	-	-	-	-
Mineral Oil 8042-47-5	TWA 5 ppm STEL 15 ppm	-	-	-	-
Petroleum distillates, solvent-refined heavy paraffinic 64741-88-4	TWA 5 ppm STEL 15 ppm	-	-	-	-
Chemical name	Luxembourg	Malta	Netherlands	Norway	Poland
Petroleum distillates, hydrotreated heavy paraffinic 64742-54-7	-	-	TWA 5 mg/m ³	TWA 1 mg/m ³ STEL 2 mg/m ³	TWA 5 mg/m ³
Mineral Oil 8042-47-5	-	-	TWA 5 mg/m ³	TWA 1 mg/m ³ STEL 2 mg/m ³	TWA 5 mg/m ³
Petroleum distillates, solvent-refined heavy paraffinic 64741-88-4	-	-	TWA 5 mg/m ³	TWA 1 mg/m ³ STEL 2 mg/m ³	TWA 5 mg/m ³

Chemical name	Portugal	Romania	Slovakia	Slovenia	Spain
Petroleum distillates, hydrotreated heavy paraffinic 64742-54-7	TWA 5 mg/m ³ STEL 10 mg/m ³	STEL 10 mg/m ³ TWA 5 mg/m ³	-	-	TWA 5 mg/m ³ STEL 10 mg/m ³
Mineral Oil 8042-47-5	TWA 5 mg/m ³ STEL 10 mg/m ³	STEL 10 mg/m ³ TWA 5 mg/m ³	-	-	TWA 5 mg/m ³ STEL 10 mg/m ³
Petroleum distillates, solvent-refined heavy paraffinic 64741-88-4	TWA 5 mg/m ³ STEL 10 mg/m ³	STEL 10 mg/m ³ TWA 5 mg/m ³	-	-	TWA 5 mg/m ³ STEL 10 mg/m ³
Chemical name	Sweden		Switzerland		United Kingdom
Petroleum distillates, hydrotreated heavy paraffinic 64742-54-7	TLV 1 mg/m ³ Indicative STEL 3 mg/m ³		-		-
Mineral Oil 8042-47-5	TLV 1 mg/m ³ Indicative STEL 3 mg/m ³		SS-C** TWA 5 mg/m ³		-
Petroleum distillates, solvent-refined heavy paraffinic 64741-88-4	TLV 1 mg/m ³ Indicative STEL 3 mg/m ³		-		-

Biological occupational exposure limits

Derived No Effect Level (DNEL) No information available.
Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls**Personal protective equipment**

Eye/face protection No special protective equipment required.

Skin and body protection No special protective equipment required.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls No information available.

9.1. Information on basic physical and chemical properties

Physical state Liquid
Appearance purple
Color No information available
Odor Hydrocarbon-like.
Odor threshold No information available

Property	Values	Remarks • Method
Melting Point / Freezing Point	No data available	None known
Boiling Point/Range	No data available	None known
Flammability	No data available	None known
Flammability Limits in Air		
Upper flammability limit:	No data available	
Lower Flammability Limit	No data available	

Flash Point	210 - °C	No information available
Autoignition Temperature	No data available	None known
Decomposition Temperature	No data available	None known
pH	No data available	None known
pH (as aqueous solution)	No data available	No information available
Viscosity, kinematic	231	None known
Viscosity, dynamic	No data available	None known
Water solubility	no data available	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Vapor pressure	No data available	None known
Specific Gravity	0.884	None known
Bulk Density	No data available	
Vapor Density	No data available	None known
Particle characteristics		
Particle Size	No information available	

9.2. Other information

VOC Content (%) 0.03853

9.2.1. Information with regard to physical hazard classes
Not applicable

9.2.2. Other safety characteristics
No information available

10.1. Reactivity

Reactivity No information available.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion Data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

10.4. Conditions to avoid

Conditions to avoid None known based on information supplied.

10.5. Incompatible materials

Incompatible materials None known based on information supplied.

10.6. Hazardous decomposition products

Hazardous Decomposition Products None known based on information supplied.

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008**Information on likely routes of exposure****Product Information**

Inhalation Specific test data for the substance or mixture is not available.

Eye contact	Specific test data for the substance or mixture is not available.
Skin contact	Specific test data for the substance or mixture is not available.
Ingestion	Specific test data for the substance or mixture is not available.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available.

Acute toxicity**Numerical measures of toxicity**

No information available

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 18,829.40 mg/kg

ATEmix (dermal) 7,176.20 mg/kg

ATEmix (inhalation-dust/mist) 4.70 mg/l

1.75864 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.

1.75864 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.

81.42114 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas).

81.42114 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor).

81.42114 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Petroleum distillates, hydrotreated heavy paraffinic	> 15 g/kg (Rat) > 24 g/kg (Rat)	> 5000 mg/kg (Rabbit)	= 2062 ppm (Rat) 4 h
Mineral Oil	> 5000 mg/kg (Rat) > 24 g/kg (Rat)	-	= 2062 ppm (Rat) 4 h
Amines, C12-14-tert-alkyl	= 300 mg/kg (Rat)	= 1120 mg/kg (Rabbit)	-
Petroleum distillates, solvent-refined heavy paraffinic	> 5000 mg/kg (Rat) > 24 g/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5530 mg/m ³ (Rat) 4 h = 2062 ppm (Rat) 4 h
(Z)-octadec-9-enylamine	= 1689 mg/kg (Rat)	-	-

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

DMSO Disclaimer The producer of "1605" declares that it contains less than 3% DMSO extractable material by IP-346

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Endocrine disrupting properties No information available.

11.2.2. Other information

Other Adverse Effects No information available.

12.1. Toxicity

Ecotoxicity The environmental impact of this product has not been fully investigated.

Unknown aquatic toxicity Contains 1.75864 % of components with unknown hazards to the aquatic environment.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Petroleum distillates, hydrotreated heavy paraffinic	-	-	-	-
Mineral Oil	-	LC50> 10000 mg/L Lepomis macrochirus 96 h	-	-
Amines, C12-14-tert-alkyl	-	LC50= 1.3 mg/L Oncorhynchus mykiss 96 h	-	-
Petroleum distillates, solvent-refined heavy paraffinic	-	-	-	-

12.2. Persistence and degradability

Persistence and Degradability No information available.

12.3. Bioaccumulative potential

Bioaccumulation There is no data for this product.

Component Information

Chemical name	Partition coefficient
Mineral Oil	6

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment No information available.

12.6. Endocrine disrupting properties

Endocrine disrupting properties No information available.

12.7. Other adverse effects**13.1. Waste treatment methods**

Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.
OTHER INFORMATION	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

ICAO/IATA

14.1. UN number or ID number	Not regulated
14.2. UN proper shipping name	Not regulated
14.3. Transport hazard class(es)	Not regulated
14.4. Packing group	Not regulated
14.5.	
14.6. Special precautions for user	
Special Provisions	None

IMDG

14.1. UN number or ID number	Not regulated
14.2. UN proper shipping name	Not regulated
14.3. Transport hazard class(es)	Not regulated
14.4.	
14.5	
14.6. Special precautions for user	
Special Provisions	None
14.7 Maritime transport in bulk according to IMO instruments	Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

RID

14.1. UN-No	Not regulated
14.2. UN proper shipping name	Not regulated
14.3. Transport hazard class(es)	Not regulated
14.4.	
14.5.	
14.6. Special precautions for user	
Special Provisions	None

ADR/RID

14.1. UN number or ID number	Not regulated
14.2. UN proper shipping name	Not regulated
14.3. Transport hazard class(es)	Not regulated
14.4.	
14.5.	
14.6. Special precautions for user	
Special Provisions	None

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

Water hazard class (WGK)	strongly hazardous to water (WGK 3)
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European Union

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

Authorizations and/or restrictions on use:

This product does not contain substances subject to authorization (Regulation (EC) No. 1907/2006 (REACH), Annex XIV) This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Persistent Organic Pollutants

Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable

International Inventories

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

15.2. Chemical safety assessment

Chemical Safety Assessment No information available

Key or legend to abbreviations and acronyms**Full text of H-Statements referred to under section 3**

H302 - Harmful if swallowed
 H314 - Causes severe skin burns and eye damage
 H317 - May cause an allergic skin reaction
 H318 - Causes serious eye damage
 H331 - Toxic if inhaled
 H373 - May cause damage to organs through prolonged or repeated exposure
 H400 - Very toxic to aquatic life
 H410 - Very toxic to aquatic life with long lasting effects

SVHC: Substances of Very High Concern for Authorization:

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA: Time weighted average STEL: Short term exposure limit
 Ceiling: Maximum limit value: * Skin designation

Classification procedure	
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method

Acute inhalation toxicity - vapor	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitization	Calculation method
Skin sensitization	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
 U.S. Environmental Protection Agency ChemView Database
 European Food Safety Authority (EFSA)
 EPA (Environmental Protection Agency)
 Acute Exposure Guideline Level(s) (AEGL(s))
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
 U.S. Environmental Protection Agency High Production Volume Chemicals
 Food Research Journal
 Hazardous Substance Database
 International Uniform Chemical Information Database (IUCLID)
 National Institute of Technology and Evaluation (NITE)
 Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
 NIOSH (National Institute for Occupational Safety and Health)
 National Library of Medicine's ChemID Plus (NLM CIP)
 National Library of Medicine's PubMed database (NLM PUBMED)
 National Toxicology Program (NTP)
 New Zealand's Chemical Classification and Information Database (CCID)
 Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
 Organization for Economic Co-operation and Development High Production Volume Chemicals Program
 Organization for Economic Co-operation and Development Screening Information Data Set
 World Health Organization

Issuing Date 08-24-2021

Revision Date 05-20-2022

Reason for revision General information

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006**Disclaimer**

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

EU SDS version information - EGHS

UL release date: 3 May 2021

GHS Revision 7

Chemical name	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)
Petroleum distillates, hydrotreated heavy paraffinic	Not Classified	
Mineral Oil	Asp. Tox. 1 (H304)	

Amines, C12-14-tert-alkyl	Acute Tox. 4 (H302) Acute Tox. 3 (H311) Acute Tox. 2 (H330) Skin Corr. 1C (H314) Eye Dam. 1 (H318) Skin Sens. 1 (H317) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	
Petroleum distillates, solvent-refined heavy paraffinic	Not Classified	
(Z)-octadec-9-enylamine	Acute Tox. 4 (H302) Skin Corr. 1B (H314) STOT RE 2 (H373) STOT SE 3 (H335) Asp. Tox. 1 (H304) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	