

INDUSTRIAL GEAR POWER 460

Industrial Gear Oil

INDUSTRIAL GEAR POWER 460 is a high performance extreme pressure gear oil which is developed for lubrication of heavy duty industrial gears working under severe operating conditions.

INDUSTRIAL GEAR POWER 460 is based on high quality virgin mineral base oil in combination with an unique additive package to ensure the following properties:

- Excellent load carrying capability protects gears against scuffing and wear and offers long equipment life and reduced maintenance costs.
- High thermo-oxidative stability helps resist deposit formation, provides enhanced system cleanliness and enables longer service intervals.
- Provides effective rust and corrosion protection to all gearbox components.
- Excellent demulsibility property enables trouble-free operation in conditions encountering water/moisture.

INDUSTRIAL GEAR POWER 460 meets the following performance criteria:

DIN 51517-3 CLP ISO 1292501 CKC AGMA 9005 E-02 US Steel 224
David Brown S1.53.101

Typical Analysis

Properties	Unit	Method	Typical Value
Density @15°C	kg/m ³	ASTM D4052	903
Kin. Viscosity @40°C	mm ² /s	ASTM D7042	474
Kin. Viscosity @100°C	mm ² /s	ASTM D7042	30.9
Viscosity Index		ASTM D2270	96
Flash Point COC, min	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-15
FZG Fail Load Stage, min		DIN 51354-2	12
Demulsibility @82°C	max	DIN 51599	15
Date Issued: 10-6-2021	Supersedes: 17-10-2016	Revision Nr.: 01	



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

1.1. Product identifier

Product form : Mixture
Product name : 73780 - INDUSTRIAL GEAR POWER 460
Product code : 73780

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

1.2.1. Relevant identified uses

Main use category : Professional use
Use of the substance/mixture : Lubricants and additives
Function or use category : Lubricants and additives

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

North Sea Lubricants B.V. B.V.
Ampèrestraat 5
NL- 3846AN Harderwijk
The Netherlands
T +31 651345369
support@northsealubricants.com - www.northsealubricants.com

1.4. Emergency telephone number

Emergency number : +31 (0)786527652
Monday to Friday: 09:00 - 16:00 (CET)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Hazardous to the aquatic environment — Chronic Hazard, Category 3 H412
Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

To our knowledge, this product does not present any particular risk, provided it is handled in accordance with good occupational hygiene and safety practice.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Signal word (CLP) : -
Hazard statements (CLP) : H412 - Harmful to aquatic life with long lasting effects.
Precautionary statements (CLP) : P273 - Avoid release to the environment.
P501 - Dispose of contents and container to an approved waste disposal plant.
EUH-statements : EUH208 - Contains Amines, C10-14-tert-alkyl. May produce an allergic reaction.

2.3. Other hazards

Other hazards which do not result in classification : Flammable liquids. Prolonged or repeated skin contact with the material will remove natural oils which leads to a dermatitis. Spills of this product present a serious slipping hazard.

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

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SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Distillates (petroleum), hydrotreated heavy paraffinic; Baseoil substance with national workplace exposure limit(s) (BE, BG, CZ, DK, HR, NL, NO); substance with a Community workplace exposure limit	CAS-No.: 64742-54-7 EC-No.: 265-157-1 EC Index-No.: 649-467-00-8 REACH-no: 01-2119484627-25	0.1 – 0.5	Asp. Tox. 1, H304
C16-18-(even numbered, saturated and unsaturated)-alkylamines	EC-No.: 627-034-4 REACH-no: 01-2119473797-19	0.01 – 0.05	Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 STOT SE 3, H335 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 (M=10)
Amines, C10-14-tert-alkyl	EC-No.: 701-175-2 REACH-no: 01-2119456798-18	0.01 – 0.05	Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Dermal), H311 Acute Tox. 2 (Inhalation:vapour), H330 Skin Sens. 1A, H317 STOT SE 3, H335 Aquatic Chronic 1, H410

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

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Wash skin with plenty of water.
First-aid measures after eye contact	: Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects after inhalation	: After adequate first aid, no further treatment is required unless symptoms reappear.
Symptoms/effects after skin contact	: After adequate first aid, no further treatment is required unless symptoms reappear.
Symptoms/effects after eye contact	: After adequate first aid, no further treatment is required unless symptoms reappear.
Symptoms/effects after ingestion	: After adequate first aid, no further treatment is required unless symptoms reappear.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : Toxic fumes may be released.

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5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Eliminate all ignition sources if safe to do so.
Emergency procedures : Ventilate spillage area.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.
Methods for cleaning up : Take up liquid spill into absorbent material.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment.
Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool.
Storage temperature : 45 °C
Storage area : Store away from heat. Store in a well-ventilated place.
Special rules on packaging : Keep only in original container. Store in a closed container.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

Distillates (petroleum), hydrotreated heavy paraffinic; Baseoil (64742-54-7)

EU - Indicative Occupational Exposure Limit (IOEL)

IOEL TWA	5 mg/m ³
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8.1.2. Recommended monitoring procedures

No additional information available

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8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

No additional information available

8.2.2. Personal protection equipment

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

No additional information available

8.2.2.2. Skin protection

Hand protection					
Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Reusable gloves	Nitrile rubber (NBR)	6 (> 480 minutes)	>0.35		EN ISO 374

8.2.2.3. Respiratory protection

No additional information available

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: light brown.
Odour	: Not available
Odour threshold	: Not available
Melting point	: Not applicable
Freezing point	: -15 °C
Boiling point	: Not available
Flammability	: Not applicable
Explosive limits	: Not available
Lower explosive limit (LEL)	: Not available
Upper explosive limit (UEL)	: Not available
Flash point	: > 230 °C
Auto-ignition temperature	: Not available
Decomposition temperature	: Not available
pH	: Not available
Viscosity, kinematic	: 462 mm ² /s @40°C
Solubility	: insoluble in water.

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Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapour pressure	: Not available
Vapour pressure at 50 °C	: Not available
Density	: 906.7 kg/m ³ @15°C
Relative density	: Not available
Relative vapour density at 20 °C	: Not available
Particle size	: Not applicable
Particle size distribution	: Not applicable
Particle shape	: Not applicable
Particle aspect ratio	: Not applicable
Particle aggregation state	: Not applicable
Particle agglomeration state	: Not applicable
Particle specific surface area	: Not applicable
Particle dustiness	: Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

Amines, C10-14-tert-alkyl	
LD50 oral (rat)	612 mg/kg (OECD 401)
LD50 dermal (rat)	251 mg/kg (OECD 402)
LC50 inhalation (rat) (mg/l)	1.19 mg/l
LC50 inhalation (rat) (Vapours - mg/l/4h)	1.19 mg/l/4h

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C16-18-(even numbered, saturated and unsaturated)-alkylamines

LD50 oral (rat)	1689 mg/kg
LD50 dermal (rat)	> 2000 mg/kg

Distillates (petroleum), hydrotreated heavy paraffinic; Baseoil (64742-54-7)

LD50 oral (rat)	> 5000 mg/kg bodyweight
LD50 dermal (rabbit)	> 5000 mg/kg
LC50 inhalation (rat) (Vapours - mg/l/4h)	> 5.53 mg/l/4h

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified

Amines, C10-14-tert-alkyl

STOT-single exposure	May cause respiratory irritation.
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C16-18-(even numbered, saturated and unsaturated)-alkylamines

STOT-single exposure	May cause respiratory irritation.
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STOT-repeated exposure	: Not classified
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Amines, C10-14-tert-alkyl

LOAEL (dermal, rat/rabbit, 90 days)	60 mg/kg bodyweight/day
NOAEL (dermal, rat/rabbit, 90 days)	20 mg/kg bodyweight/day

C16-18-(even numbered, saturated and unsaturated)-alkylamines

STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
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Distillates (petroleum), hydrotreated heavy paraffinic; Baseoil (64742-54-7)

LOAEL (oral, rat, 90 days)	125 mg/kg bodyweight
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Aspiration hazard	: Not classified
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Viscosity, kinematic	462 mm ² /s @40°C
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11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Harmful to aquatic life with long lasting effects.

Amines, C10-14-tert-alkyl

LC50 - Fish [1]	1.3 mg/l
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Amines, C10-14-tert-alkyl	
EC50 - Crustacea [1]	2.5 mg/l Daphnia magna
EC50 72h - Algae [1]	0.44 mg/l Pseudokirchneriella subcapitata
NOEC chronic fish	0.078 mg/l 96d
NOEC chronic algae	0.05 mg/l 3d
C16-18-(even numbered, saturated and unsaturated)-alkylamines	
LC50 - Fish [1]	0.06 mg/l
EC50 - Crustacea [1]	0.011 mg/l
EC50 72h - Algae [1]	0.04 mg/l
NOEC chronic crustacea	0.013 mg/l
Distillates (petroleum), hydrotreated heavy paraffinic; Baseoil (64742-54-7)	
LC50 - Fish [1]	> 100 mg/l Pimephales promelas
EC50 - Crustacea [1]	> 10000 mg/l Daphnia magna
NOEC chronic fish	1000 mg/l Oncorhynchus mykiss
NOEC chronic crustacea	10 mg/l Daphnia magna
NOEC chronic algae	> 100 mg/l Pseudokirchneriella subcapitata

12.2. Persistence and degradability

Amines, C10-14-tert-alkyl	
Persistence and degradability	Not readily biodegradable.
Biochemical oxygen demand (BOD)	21.8
C16-18-(even numbered, saturated and unsaturated)-alkylamines	
Biodegradation	66 % 28 d OECD 301B
Distillates (petroleum), hydrotreated heavy paraffinic; Baseoil (64742-54-7)	
Persistence and degradability	Not readily biodegradable.
Biodegradation	31 % 28 d OECD 301F

12.3. Bioaccumulative potential

Amines, C10-14-tert-alkyl	
Partition coefficient n-octanol/water (Log Pow)	2.9
C16-18-(even numbered, saturated and unsaturated)-alkylamines	
Bioconcentration factor (BCF REACH)	500
Partition coefficient n-octanol/water (Log Kow)	4.33 @25 °C
Distillates (petroleum), hydrotreated heavy paraffinic; Baseoil (64742-54-7)	
Partition coefficient n-octanol/water (Log Kow)	> 4

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

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12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.2. UN proper shipping name				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards				
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No	Dangerous for the environment: No	Dangerous for the environment: No
No supplementary information available				

14.6. Special precautions for user

Overland transport

No data available

Transport by sea

No data available

Air transport

No data available

Inland waterway transport

No data available

Rail transport

No data available

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

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SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

Contains no substance subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

Contains no substance subject to Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors.

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Full text of H- and EUH-statements:

Acute Tox. 2 (Inhalation:vapour)	Acute toxicity (inhalation:vapour) Category 2
Acute Tox. 3 (Dermal)	Acute toxicity (dermal), Category 3
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
Asp. Tox. 1	Aspiration hazard, Category 1
EUH208	Contains Amines, C10-14-tert-alkyl. May produce an allergic reaction.
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.
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.
H412	Harmful to aquatic life with long lasting effects.
Skin Corr. 1B	Skin corrosion/irritation, Category 1, Sub-Category 1B
Skin Sens. 1A	Skin sensitisation, category 1A
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2

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Full text of H- and EUH-statements:

STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
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Safety Data Sheet (SDS), EU

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.