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

1.1	**Product identifier** **Product Name**	Hexadecene
	EC number	248-131-4
	CAS number	26952-14-7
	Trade name	PureNova® 1351
	Other names	N/A
	Chemical Family	Branched and linear olefinic hydrocarbons
	REACH Registration No.:	01-2119486450-38-0006
1.2	**Relevant identified uses of the substance or mixture and uses advised against**	
	Identified uses (s)	**Uses at industrial sites:** [SU 10] IW-3 Uses in coatings [PC 24] [SU 10] IW-5 Use as release agents or binders [PC 24] [SU 10, 11] IW-6 Rubber production and processing [PC 24] [SU 10] IW-7 Use in polymer processing [PC 24] **Uses by professional workers:** [SU 10] PW-15 Use in coatings [PC 9a] [SU 12] PW-17 Use as release agents or binders [PC 24] [SU 11, 12, 17] PW-19 Uses in polymer processing [PC 24] **Consumer uses:** C-26 Uses in Coatings [PC 1, 4, 8, 9a, 9b, 9c, 15, 18, 23, 24, 31, 34] **Article service life:** SL-33 Rubber production and processing [AC 10] SL-34 Use in polymer processing [AC 01] SL-36 Uses in polymer processing [AC 01]
	Uses advised against	None, although recommended for the above use only.
1.3	**Details of the supplier of the safety data sheet**	
	Non-EU Manufacturer	Novvi LLC 1600 Harbor Bay Pkwy., Suite 250, Alameda, CA 94502 Tel: +1 (281) 972-0724 E-mail: sds@novvi.com
	Only Representative	CS Regulatory (Ireland) Ltd Alexandra House The Sweepstakes D04 C7H2 Ballsbridge Dublin Ireland Tel/Fax: +44 1332 380692
1.4	**Emergency telephone number (Chemtrec):**	1-(703) 527-3887 (Outside the US) Collect calls accepted 24 hour availability; English spoken.

SECTION 2: Hazards identification

This product is classified as hazardous according to Regulation (EC) No 1272/2008 and its amendments

2.1 Classification of the substance or mixture

2.1.1 Classification according to Regulation (EC) No 1272/2008 (including amendments): Aspiration Hazard, Category 1, H304

2.2 Label elements

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

Hazard pictogram(s)
GHS08: health hazard

Signal word(s) Danger

Hazard statement(s) H304 - May be fatal if swallowed and enters airways.

Precautionary statement(s)

P301+P310: IF SWALLOWED: Immediately call a Poison Center or doctor/ physician.

P331 - Do NOT induce vomiting.

P405 - Store locked up.

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

2.3 Other hazards See section 11.

2.4 Additional information This substance does not meet the criteria of PBT/vPvB or identified as having endocrine disrupting properties.

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	% Weight	CAS No.	EC No	REACH Registration No.	Hazard Statements(s)
Hexadecene	90-100	26952-14-7	248-131-4	01-2119486450-38-0006	Aspiration Hazard, Category 1, H304

SECTION 4: First aid measures

4.1 Description of first aid measures

	Inhalation	IF INHALED: Immediately move exposed subject to fresh air. If not breathing, give artificial respiration. If breathing is labored, administer oxygen. Immediately notify medical personnel and supervisor.
	Skin Contact	IF ON SKIN: Wash exposed area with soap and water and remove contaminated clothing/shoes. If irritation occurs or persists, notify medical personnel and supervisor.
	Eye Contact	IF IN EYES: If easy to do, remove contact lenses, if worn. Immediately flush eyes with copious quantities of water for at least 15 minutes. If irritation occurs or persists, notify medical personnel and supervisor.
	Ingestion	IF SWALLOWED: If swallowed, call a physician immediately. Do not induce vomiting unless directed by medical personnel. Do not give anything to drink unless directed by medical personnel. Never give anything by mouth to an unconscious person. Notify medical personnel and supervisor.
	Protection of first aid responders	See Section 8 for Exposure Controls/Personal Protection recommendations.
4.2	**Most important symptoms and effects, both acute and delayed**	See Sections 2 and 11.
4.3	**Indication of any immediate medical attention and special treatment needed**	Treat symptomatically and supportively. If accidental exposure occurs to an individual who is also taking one or more concomitant medications, consult the respective package or prescribing information for potential drug interactions.

SECTION 5: Firefighting measures

5.1	**Suitable Extinguishing Media**	Use water spray (fog), foam, dry powder, or carbon dioxide, as appropriate for surrounding fire and materials.
	Unsuitable Extinguishing Media	
5.2	**Special hazards arising from the substance or mixture**	No information identified. May emit toxic fumes of carbon monoxide and carbon dioxide. Vapors may form explosive mixtures with air.
	Flammability/Explosivity	No explosivity or flammability data identified. High airborne concentrations of finely divided organic particles can potentially explode if ignited. In a fire or if heated, a pressure increase will occur and the container may burst.
5.3	**Advice for firefighters**	Wear full protective clothing and a self-contained breathing apparatus with a full face piece operated in the pressure demand or other positive pressure mode. Decontaminate all equipment after use.

SECTION 6: Accidental release measures

6.1	**Personal precautions, protective equipment and emergency procedures**	If product is released or spilled, take proper precautions to minimize exposure by using appropriate personal protective equipment (see Section 8). Area should be adequately ventilated.
6.1.1	**For non-emergency personnel**	Do not allow non-authorized personnel to access around the leakage area: mark the area using rope, etc.
6.1.2	**For emergency personnel**	If indoors, ventilate thoroughly until the treatment is completed. Work from the upwind position. Evacuate people from downwind. Prepare fire extinguisher in advance against fire. Beware of the slippery floor where the product is spilled. Wear protective equipment as specified in "Section 8. Exposure Controls/Personal Protection" (rubber gloves, protective glasses, protective clothing and such) when engaged in treatment of the leakage.
6.2	**Environmental precautions**	Do not empty into drains. Avoid release to the environment.
6.3	**Methods and material for containment and cleaning up**	For small spills (such as in a laboratory), soak up material with absorbent, e.g., damp paper towel, and wash spill area thoroughly with soap and water. For large spills in manufacturing, use an industrial vacuum cleaner equipped with a high efficiency particulate (HEPA) filter if available. Alternatively if in solid or dried form, do not raise dust. Surround spill or powder with absorbents and place a damp cloth or towel over the area to minimize powder from entering the air. Use care in the choice of absorbents as some may react and generate excess heat and create a risk of fire. Review safety data sheets of absorbents prior to use. Add excess liquid to allow for the material to enter solution. Capture remaining liquid onto spill absorbents. Place spill materials into a leak-proof container suitable for disposal. Decontaminate area a second time. Dispose of material in a manner that is compliant with federal, state and local laws.
6.4	**Reference to other sections**	See Sections 8 and 13 for more information.

SECTION 7: Handling and storage

7.1	**Precautions for safe handling**	Avoid contact with eyes, skin and other mucous membranes. Wash hands thoroughly after handling. Avoid breathing vapor. Do not eat, drink or smoke while handling this product. Avoid prolonged or repeated exposure. Provide sufficient air exchange and/or exhaust in workrooms. Take precautionary measures against static discharges. Use normal preventative fire protection measures.
7.2	**Conditions for safe storage, including any incompatibilities**	Keep container tightly closed. Keep in a cool and well ventilated area away from any ignition source. To maintain product quality, do not store in heat or direct sunlight.

7.3	**Specific end use(s)**	Synthetic process oil for use in the formulation of polymer, coatings and similar products as identified in sub-section 1.2.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

8.1.1 Occupational exposure limits

AUS HSIS: None Listed.

US OSHA 29 CFR Part 1 910 Subpart Z: None listed

US ACGIH-TLV: None listed

US NIOSH REL: None listed

German MAK: None Listed

EU OEL: None Listed.

8.1.2 Biological Limit Value

None Listed.

8.1.3 PNECs and DNELS:

Not derived. Produce is non-hazardous with the exception of aspiration toxicity.

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Selection and use of containment devices and personal protective equipment should be based on a risk assessment of exposure potential. Use local exhaust and/ or enclosure at mist/aerosol/spray-generating points. High-energy operations such as spraying should be done within an approved emission control or containment system.

8.2.2 Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields, chemical splash goggles, or full face shield, if necessary. Base the choice of protection on the job activity and potential for contact with eyes or face. An emergency eye wash station should be available.

Skin protection

Wear appropriate gloves, lab coat, or other protective over garment if skin contact is likely. Base the choice of skin protection on the job activity, potential for skin contact and solvents and reagents in use.

Respiratory protection

Choice of respiratory protection should be appropriate to the task and the level of existing engineering controls. An approved and properly fitted air-purifying respirator with HEPA filters should provide ancillary protection based on the known or foreseeable limitations of existing engineering controls. Use a powered air-purifying respirator equipped with HEPA filters or combination filters or a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, when exposure levels are not known, or in any other circumstances where a lower level of respiratory protection may not provide adequate protection.

Use only respiratory protection that conforms to EN149 as minimum standard.

	Hand protection	Wear nitrile or other impervious gloves if skin contact is possible. When the material is dissolved or suspended in an organic solvent, wear gloves that provide protection against the solvent.
	Other protective measures	Wash hands in the event of contact with this mixture, especially before eating, drinking or smoking. Protective equipment is not to be worn outside the work area (e.g., in common areas or out-of-doors). Decontaminate all protective equipment following use.
8.2.3	**Environmental exposure controls**	Follow best practice for site management and disposal of waste. Avoid release to the environment and operate within closed systems wherever practicable, Air and liquid emissions should be directed to appropriate pollution control devices. In case of spill, do not release to drains. Implement appropriate and effective emergency response procedures to prevent release or spread of contamination and to prevent inadvertent contact by personnel.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Colour	Colorless to pale-yellow
Odour	Paraffinic
Odour threshold (ppm)	No data available
pH (Value)	No data available
Melting point / freezing point	-20 °C
Boiling point or initial boiling point and boiling range	265 °C
Flash point (°C)	127 °C
Evaporation rate	No data available
Flammability	No data available
Lower and upper explosion limit	Not flammable
Vapour pressure	5 Pa at 20°C
Relative vapour density	No data available
Density and/or relative density	0.78 g/ml at 20°C
Solubility	Water solubility 0.001 mg/L at 25 °C Soluble in hydrocarbon solvents
Partition coefficient (n-octanol/water)	Log Pow 7.98 at 20°C

Auto-ignition temperature	240 °C at 325 Pa
Decomposition temperature (°C)	No data available
Viscosity (mPa. s)	2.6 mm²/s at 40°C
Particle characteristics	No data

9.2 Other information

9.2.1 Information with regard to physical hazard classes

Explosives	Not explosive
Aerosols	Not applicable
Oxidising gases	Not applicable
Gases under pressure	Not applicable
Flammable liquids	Not flammable
Flammable solids	Not applicable
Self-reactive substances and mixtures	Not self-reactive
Pyrophoric liquids	Not classified
Pyrophoric solids	Not applicable
Self-heating substances and mixtures	Not self-heating
Substances and mixtures, which emit flammable gases in contact with water	Not applicable
Oxidising liquids	Not oxidizing
Oxidizing solids	Not applicable
Organic peroxides	Not applicable
Corrosive to metals	Not corrosive
Desensitised explosives	Not applicable

9.2.2 Other safety characteristics No other information.

SECTION 10: Stability and reactivity

10.1 Reactivity No data available.

10.2	**Chemical stability**	Stable under normal handling and storage conditions.
10.3	**Possibility of hazardous reactions**	Not expected to occur.
10.4	**Conditions to avoid**	Keep away from heat and open flames.
10.5	**Incompatible materials**	Avoid strong oxidizers, strong acids and strong bases.
10.6	**Hazardous decomposition products**	Carbon oxides (CO, CO2)

SECTION 11: Toxicological information

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

Acute oral toxicity	LD50: > 5600 mg/kg bw Species: Rat Method: Acute oral toxicity – Fixed dose method
Acute Inhalation toxicity	LC50: 8050 ppm Exposure time: 4 h Test atmosphere: vapor Method: Acute inhalation toxicity
Acute dermal toxicity	LD50: > 2000 mg/kg bw Species: Rabbit Method: Acute Dermal toxicity
Skin corrosion/irritation	This class of compounds is not corrosive or irritating to skin.
Serious eye damage/irritation	This class of compounds is not corrosive or irritating to eyes.
Respiratory or skin sensitisation	This class of compounds is not associated with respiratory or skin sensitization effects.
STOT-single exposure	No studies identified.
STOT-repeated exposure/Repeat-dose toxicity	No studies identified
Reproductive toxicity	NOAEL 1000 mg/kg bw /day
Developmental toxicity	NOEL 1000 mg/kg bw /day
Germ cell mutagenicity	This class of compounds is non-genotoxic
Carcinogenicity	No studies identified.
Aspiration hazard	May be fatal if swallowed and enters airways.
Information on likely routes of exposure	Oral, dermal, inhalation, eye.
Delayed and immediate effects as well as chronic effects from short and long-term exposure	None identified. With the exception of the aspiration hazard, the substance is considered to be non-toxic.
Symptoms related to the physical, chemical and toxicological characteristics	None identified. With the exception of the aspiration hazard, the substance is considered to be non-toxic.
Interactive effects	None identified. With the exception of the aspiration hazard, the substance is considered to be non-toxic.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties	Substance has not been identified as having endocrine disrupting properties based on the available information.
11.2.2 Other information	No other information available.
Neurotoxicity	NOAEL 1000 mg/kg bw/day

SECTION 12: Ecological information

12.1	**Toxicity**	**Acute Fish Toxicity:** LL50: 5.6 mg/L Exposure time : 96 h Species: Oncorhynchus mykiss Semi-static renewal, Test Method: OECD Test Guideline 203 **Acute Daphnia Toxicity :** EC50: 4.4 mg/l Exposure time: 48 h Species: Daphnia magna Static test, Test Method: OECD Test Guideline 202 **Algal Toxicity:** EC50: > 5.5 mg/L Exposure time: 96 h Species: Pseudokirchneriella subcapitata Static test, Test Method: OECD Test Guideline 201
12.2	**Persistence and degradability**	Readily biodegradable.
12.3	**Bioaccumulative potential**	Predicted not to bioaccumulate Log Kow >10
12.4	**Mobility in soil**	Predicted Log Koc 3.630781 at 20°C
12.5	**Results of PBT and vPvB assessment**	Not PBT/ vPvB
12.6	**Endocrine disrupting properties**	Substance has not been identified as having endocrine disrupting properties based on the available information.
12.7	**Other adverse effects**	No data available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

13.1.1 Residual wastes	Used product should be disposed of according to local, regional, national, and international regulations. Do not send down the drain or flush down the toilet. All wastes containing the material should be properly labeled. Dispose of wastes in accordance to prescribed local, regional, national, and international guidelines, e.g., appropriately permitted chemical waste incinerator. Rinse waters resulting from spill cleanups should be discharged in an environmentally safe manner, e.g., appropriately permitted municipal or on-site wastewater treatment facility.
13.1.2 Contaminated containers and packaging	Remove contents completely before the disposal of empty containers. Dispose of the containers and such according to the national and local relevant acts and regulations.
13.2 Other information	None

SECTION 14: Transport information

Based on the available data, this mixture is not regulated as a hazardous material/ dangerous good under EU ADR/RID, US DOT, Canada TDG, IATA, or IMDG.

14.1	**UN number or ID number**	None assigned.
14.2	**UN proper shipping name**	None assigned.
14.3	**Transport hazard class(es)**	None assigned.
14.4	**Packing group**	None assigned.
14.5	**Environmental hazards**	Based on the available data, this product/mixture is not regulated as an environmental hazard or a marine pollutant
14.6	**Special precautions for user**	Avoid exposure and releases to the environment
14.7	**Maritime transport in bulk according to IMO Instruments**	Not applicable.
14.8	**Hazchem or Emergency Action Code**	None assigned.

SECTION 15: Regulatory information

This safety datasheet complies with the requirements of Regulation (EC) No's 1907/2006, 1272/2008 and Amendments.

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

OSHA Hazardous	Yes. Harmful or fatal if swallowed. Can enter lungs and cause damage.
WHMIS classification	This substance does not meet any of the hazard criteria of the Controlled Products Regulations and the SDS contains all of the information required by those regulations.
TSCA status	This material is listed on the TSCA inventory.
EU REACH Status	The product is registered under the EU REACH Regulation.
EU Authorisation Status	Not applicable.
EU Restriction Status	Not applicable.
SARA section 312/313	Acute health hazard (aspiration)
California proposition 65	Not listed.
Canada NDSL	This product contains one or several components listed in the Canadian NDSL.
Australia AICS	Not in compliance with the inventory
New Zealand NZIoC	On the inventory, or in compliance with the inventory

Japan ENCS	On the inventory, or in compliance with the inventory
Korea KECI	On the inventory, or in compliance with the inventory
Philippines PICCS	On the inventory, or in compliance with the inventory
China IECSC	On the inventory, or in compliance with the inventory
Switzerland CH INV	On the inventory, or in compliance with the inventory

15.2 **Chemical Safety Assessment.**
A Chemical Safety Assessment has been carried out for this substance. Please refer to Appendix 1 below

SECTION 16: OTHER INFORMATION

Date of preparation of SDS: 02 February 2022

Full text of H phrases, P phrases: And GHS classification: Aspiration Hazard – Category 1 H304 – May be fatal if swallowed and enters airways

NFPA Classification: Health Hazard 1: Fire Hazard 1: Reactivity Hazard: 0

Sources of data: Information from published literature and internal company data.

ABBREVIATIONS
ACGIH - American Conference of Governmental Industrial Hygienists ADR/RID - European Agreement Concerning the International Carriage of Dangerous Goods by Road/Rail
AIHA - American Industrial Hygiene Association
CAS# - Chemical Abstract Services Number
DNEL - Derived No Effect Level
DOT - Department of Transportation
EINECS - European Inventory of New and Existing Chemical Substances
ELINCS - European List of Notified Chemical Substances
EU - European Union
GHS - Globally Harmonized System of Classification and Labelling of Chemicals
IARC - International Agency for Research on Cancer
IDLH - Immediately Dangerous to Life or Health
IATA - International Air Transport Association
IMDG - International Maritime Dangerous Goods
LOEL - Lowest Observed Effect Level
LOAEL - Lowest Observed Adverse Effect Level
NIOSH - The National Institute for Occupational Safety and Health NOEL - No Observed Effect Level
NOAEL - No Observed Adverse Effect Level
NTP - National Toxicology Program
OEL - Occupational Exposure Limit
OSHA - Occupational Safety and Health Administration
PBT - Persistent, Bioaccumulative and Toxic
PNEC - Predicted No Effect Concentration
SARA - Superfund Amendments and Reauthorization Act
STEL - Short Term Exposure Limit
TDG - Transport Dangerous Goods
TSCA - Toxic Substances Control Act
TWA - Time Weighted Average
WHMIS - Workplace Hazardous Materials Information System
NOAEL – No Observed Adverse Effect Level

Revisions: Rev. 1.2. Updated company contact information

Disclaimer

The above information is based on data available to us and is believed to be correct. Since the information may be applied under conditions beyond our control and with which we may be unfamiliar, we do not assume any responsibility for the results of its use and all persons receiving it must make their own determination of the effects, properties and

protections which pertain to their particular conditions. No representation, warranty, or guarantee, express or implied (including a warranty of fitness or merchantability for a particular purpose), is made with respect to the materials, the accuracy of this information, the results to be obtained from the use thereof, or the hazards connected with the use of the material. Caution should be used in the handling and use of the material because it is a pharmaceutical product. The above information is offered in good faith and with the belief that it is accurate. As of the date of issuance, we are providing all information relevant to the foreseeable handling of the material. However, in the event of an adverse incident associated with this product, this Safety Data Sheet is not, and is not intended to be, a substitute for consultation with appropriately trained personnel.

APPENDIX 1 – EXPOSURE SCENARIOS

Section 1. Exposure Scenarios	
Titles:	
Uses at industrial sites: IW-3 Uses in coatings IW-5 Use as release agents or binders IW-6 Rubber production and processing IW-7 Use in polymer processing Uses by professional workers: PW-15 Use in coatings PW-17 Use as release agents or binders PW-19 Uses in polymer processing Consumer uses: C-26 Uses in Coatings Article service life: SL-33 Rubber production and processing SL-34 Use in polymer processing SL-36 Uses in polymer processing	
Use Descriptors:	
Sector(s) of Use	SU 1, SU 2b, SU 6b, SU 8, SU 10, SU 11, SU 12, SU 14, SU 15, SU 17, SU 24, SU 25
Process Categories	PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 6, PROC 7, PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 11, PROC 13, PROC 14, PROC 15, PROC 17, PROC 18, PROC 19, PROC 20, PROC 21
Environmental Release Categories	ERC2, ERC3, ERC4, ERC4, ERC5, ERC6a, ERC6d, ERC7, ERC8a, ERC8c, ERC8d, ERC8f, ERC9a, ERC9b
Product Categories	PC 1, PC 3, PC 4, PC 8, PC 9a, PC 9b, PC 9c, PC 12, PC 15, PC 16, PC 17, PC 18, PC 23, PC 24, PC 27, PC 28, PC 31, PC 34, PC 35, PC 39
Article Categories	AC 01, AC 1, AC 6, AC 7, AC 10, AC 13

Processes, tasks, activities covered
Manufacture of the substance or use as an intermediate, process chemical or extracting agent. Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).
Loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading, distribution and associated laboratory activities.
Use as an intermediate (not related to Strictly Controlled Conditions). Includes incidental exposures during recycling/ recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).
Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tabletting, compression, palletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.
Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, spreader, dip, flow, fluidised bed on production lines and film formation) and equipment cleaning, maintenance and associated laboratory activities.

Covers the use as a component of cleaning products including transfer from storage, pouring/unloading from drums or containers. Exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand), related equipment cleaning and maintenance.
Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of machinery/engines and similar articles, reworking on reject articles, equipment maintenance and disposal of wastes.
Covers the use in formulated MWFs (MWFs)/rolling oils including transfer operations, rolling and annealing activities, cutting/machining activities, automated and manual application of corrosion protections (including brushing, dipping and spraying), equipment maintenance, draining and disposal of waste oils.
Covers the use as binders and release agents including material transfers, mixing, application (including spraying and brushing) and handling of waste.
Use as functional fluids e.g. cable oils, transfer oils, coolants, insulators, refrigerants, hydraulic fluids in industrial equipment including maintenance and related material transfers.
Use of the substance within laboratory settings, including material transfers and equipment cleaning.
Manufacture of tyres and general rubber articles, including processing of raw (uncured) rubber, handling and mixing of rubber additives, vulcanising, cooling and finishing.
Processing of formulated polymers including material transfers, additives handling (e.g. pigments, stabilisers, fillers, plasticisers, etc.), moulding, curing and forming activities, material re-works, storage and associated maintenance.
Covers the use of the substance for the treatment of water at industrial facilities in open and closed systems
Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, brush, spreader by hand or similar methods, and film formation) and equipment cleaning, maintenance and associated laboratory activities.
Covers the use as a component of cleaning products including pouring/unloading from drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand).
Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of engines and similar articles, reworking on reject articles, equipment maintenance and disposal of waste oil.
Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of engines and similar articles, reworking on reject articles, equipment maintenance and disposal of waste oil.

Processes, tasks, activities covered
Covers the use in formulated MWFs (metal working fluids)/rolling oils including transfer operations, rolling and annealing activities, cutting/machining activities, automated and manual application of corrosion protections (including brushing, dipping and spraying), equipment maintenance, draining and disposal of waste oils
Covers the use as binders and release agents including material transfers, mixing, application by spraying, brushing, and handling of waste.
Use as an agrochemical excipient for application by manual or machine spraying, smokes and fogging; including equipment clean-downs and disposal.
Use as functional fluids e.g. cable oils, transfer oils, insulators, refrigerants, hydraulic fluids in closed professional equipment including incidental exposures during maintenance and related material transfers.
Use of small quantities within laboratory settings, including material transfers and equipment cleaning.
Covers exposures arising from the manufacture and use of slurry explosives (including materials transfer, mixing and charging) and equipment cleaning.
Covers the use of the substance for the treatment of water in open and closed systems.

Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including product transfer and preparation, application by brush, spray by hand or similar methods) and equipment cleaning.
Covers general exposures to consumers arising from the use of household products sold as washing and cleaning products, aerosols, coatings, de-icers, lubricants and air care products.
Covers the consumer use of formulated lubricants in closed and open systems including transfer operations, application, operation of engines and similar articles, equipment maintenance and disposal of waste oil.
Covers the consumer use of agrochemicals in liquid and solid forms.
Covers consumer uses in liquid fuels.
Consumer uses e.g. as a carrier or emollient in cosmetics/personal care products, perfumes and fragrances. Note: For cosmetic and personal care products, risk assessment only required for the environment under REACH as human health is covered by alternative legislation.
Section 2. Operational conditions and risk management measures
Section 2.1. Control of worker exposure
Product Characteristic
Liquid
Duration, frequency and amount
Covers daily exposures up to 8 hours
Covers percentage substance in the product up to 100 %
Other given operational conditions affecting workers exposure
Assumes a good basic standard of occupational hygiene is implemented

Contributing Scenarios/Specific Risk Management Measures and Operating Conditions

'Aspiration' means the entry of a liquid substance directly into the trachea and lower respiratory tract. Aspiration of hydrocarbon substances can result in severe acute effects such as chemical pneumonitis, varying degrees of pulmonary injury or death. This property relates to the potential for low viscosity material to spread quickly into the deep lung and cause severe pulmonary tissue damage. Classification of a hydrocarbon substance for aspiration hazard is made on the basis of reliable human evidence or on the basis of physical properties.

The H304 Hazard Statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived.

This general qualitative CSA approach aims to reduce/avoid contact or incidents with the substance. However, implementation of risk management measures (RMMs) and operational conditions (OCs) need to be proportional to the degree of concern for the health hazard presented by the substance. Exposures should be controlled to at least the levels that represent an acceptable level of risk such that the implementation of the chosen RMMs will ensure that the likelihood of an event occurring due to the substance hazard is negligible, and the risk is considered to be controlled to a level of no concern.

There are no routine anticipated exposures by ingestion related to any supported uses of the substance. The risk arising from aspiration hazard is solely related to the physico-chemical properties of the substance. The risk can therefore be controlled by implementing risk management measures tailored to this specific risk. For any substance, classified as Aspiration Toxicity Category 1, these measures should be communicated via the safety data sheet by use of the following phrase:

• IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

When the substance is present in formulated products at a relatively low concentration therefore it is not expected to pose an aspiration hazard to professional users and consumers. According to the CLP Regulation, a substance classified as posing an aspiration hazard needs to be present in a mixture at a concentration ≥ 10% to trigger classification of the mixture.

Section 2.2. Control of environmental exposure	
Product characteristics	Not applicable; substance is not classified as hazardous for the environment.
Duration, frequency and amount	
Environmental factors not influenced by risk management	
Other given operational conditions affecting environmental exposure	
Technical conditions and measures at process level (source) to prevent release	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
Organisation measures to prevent/limit release from site	
Conditions and measures related to municipal sewage treatment plant	
Conditions and measures related to external treatment of waste for disposal	
Conditions and measures related to external recovery of waste	

Section 3. Exposure Estimation

3.1. Health

Exposure estimation is not determined. The substance is predicted to be non-toxic based on equivalent products. Substance is only classified for physical hazard – quantitative risk characterisation is not required. Aspiration hazard is considered to be addressed appropriately via hazard communication.

There are no routine anticipated exposures by ingestion related to any supported uses of the substance. The risk arising from aspiration hazard is solely related to the physico-chemical properties of the substance. The risk can therefore be controlled by implementing risk management measures tailored to this specific risk.

As such, in depth evaluation and assessment of the exposure scenarios resulting from this use category is not considered appropriate. Likely sources of exposure are likely to be via dermal exposure with some limited potential inhalation of oil mist. However, the substance is not anticipated to cause any effects.

3.2. Environment

Not applicable. Substance is not classified – exposure estimation is not required.

Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Risk Management Measures are based on qualitative risk characterisation. The product is not classified as toxic to humans or the environment.

Components of Qualitative Risk assessment:
Worker
• Do not ingest
• Implementation of basic standards of occupational hygiene
• Avoid splashes and spills
• Avoidance of contact with contaminated tools and objects
• Management/supervision to check that the RMMs in place are being used correctly and OCs followed
• Training for staff on good Practice
• Good standard of personal hygiene