Material Safety Data Sheet

1. Material and company identification

Material Name : **Rotair Plus**

Product Use : Compressor oil

Product Code : 0017 1398 15

Manufacturer/Supplier
: **ICD (International Compressor Distribution) nv,**
Boomsesteenweg 957,
2610 Wilrijk, Belgium

Telephone : Please contact your local Service Center or the ICD office in Belgium: +32 3 870 2111 (8am-5pm CET)

Email Contact for Safety Data Sheet
: If you have any enquiries about the content of this Material Safety Data Sheet please email info.lubricants@icdcompany.com

Emergency Telephone Number
: Only for medical related issues, please contact CHEMTREC: 800-424-9300

2. Hazards identification

2.1 GHS Classification
: Not a hazardous substance or mixture.

GHS Label element
Hazard pictograms : No Hazard Symbol required
Signal word : No signal word

2.2 Hazard statements : PHYSICAL HAZARDS:
Not classified as a physical hazard under GHS criteria.
HEALTH HAZARDS:
Not classified as a health hazard under GHS criteria.
ENVIRONMENTAL HAZARDS:
Not classified as an environmental hazard under GHS criteria.

2.3 Precautionary statements
Prevention : No precautionary phrases.
Response : No precautionary phrases.
Storage : No precautionary phrases.
Disposal : No precautionary phrases.

Other hazards which do not result in classification
: Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin result-ing in disorders such as oil acne/folliculitis.
Used oil may contain harmful impurities.
Not classified as flammable but will burn.

The classification of this material is based on OSHA HCS 2012 criteria.

Under normal conditions of use or in a foreseeable emergency, this product does not meet the definition of a hazardous chemical when evaluated according to the OSHA Hazard Communica-tion Standard, 29 CFR 1910.1200.

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3. Composition/information on ingredients

3.1 Chemical nature : Highly refined mineral oils and additives.
The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

* contains one or more of the following CAS-numbers: 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-65-0, 68037-01-4, 72623-86-0, 72623-87-1, 8042-47-5, 848301-69-9.

3.2 Hazardous components

Chemical Name	Synonyms	CAS-No.	Concentration (%)
Interchangeable low vis-cosity base oil (<20,5 cSt @40°C) *		Not Assigned	0- 90

4. First-aid measures

4.1 General advice : Not expected to be a health hazard when used under normal conditions.

If inhaled : No treatment necessary under normal conditions of use. If symptoms persist, obtain medical advice.

In case of skin contact

: Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available. If persistent irritation occurs, obtain medical attention.

In case of eye contact

: Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.

If swallowed : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.

4.2 Most important symptoms and effects, both acute and delayed

: Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas. Ingestion may result in nausea, vomiting and/or diarrhoea.

Protection of first-aiders

When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.

4.3 Immediate medical attention, special treatment

Treat symptomatically.

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5. Fire-fighting measures

5.1 Suitable extinguishing media

: Foam, water spray or fog. Dry chemical powder, carbon diox-ide, sand or earth may be used for small fires only.

5.2 Unsuitable extinguishing media

: Do not use water in a jet.

5.3 Specific hazards during fire-fighting

: Hazardous combustion products may include:
A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide may be evolved if incomplete combustion occurs. Unidentified organic and inorganic compounds.

5.4 Specific extinguishing meth-ods

: Use extinguishing measures that are appropriate to local cir-cumstances and the surrounding environment.

5.5 Special protective equipment for firefighters

: Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

6. Accidental release measures

6.1 Personal precautions, protec-tive equipment and emer-gency procedures

: Avoid contact with skin and eyes.

6.2 Environmental precautions

: Use appropriate containment to avoid environmental contami-nation. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.

: Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

: Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in an absorbent. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.

Additional advice : For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet. For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet.

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7. Handling and storage

7.1 Technical measures : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.

Precautions for safe handling
: Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.

Avoidance of contact : Strong oxidising agents.

Product Transfer : This material has the potential to be a static accumulator. Proper grounding and bonding procedures should be used during all bulk transfer operations.

7.2 Storage

Other data : Keep container tightly closed and in a cool, well-ventilated place.

Use properly labeled and closable containers.
Store at ambient temperature.

Packaging material : Suitable material: For containers or container linings, use mild steel or high density polyethylene.
Unsuitable material: PVC.

Container Advice : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

8. Exposure controls/personal protection

8.1 Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parame-ters / Permissible concentration
Oil mist, mineral	Not Assigned	TWA ((inhal-able frac-tion)	5 mg/m^3
		(Mist)	5 mg/m^3

Biological occupational exposure limits
: No biological limit allocated.

8.2 Monitoring Methods : Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure con-trols. For some substances biological monitoring may also be appropriate. Validated exposure measurement methods should be applied by a competent person and sam-ples analysed by an accredited laboratory. Examples of sources of recommended exposure measurement methods are given below or con-tact the supplier. Further national methods may be available.

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National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods http://www.cdc.gov/niosh/

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods http://www.osha.gov/

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances http://www.hse.gov.uk/

InstitutfürArbeitsschutzDeutschenGesetzlichen Unfallversicherung (IFA), Germany. http://www.dguv.de/inhalt/index.jsp

L'Institut National de Rechercheet de Securité, (INRS), France http://www.inrs.fr/accueil

8.3 Engineering measures

: The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Adequate ventilation to control airborne concentrations.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

8.4 General Information : Define procedures for safe handling and maintenance of controls. Educate and train workers in the hazards and control measures relevant to normal activities associated with this product. Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation. Drain down system prior to equipment break-in or maintenance. Retain drain downs in sealed storage pending disposal or subsequent recycle. Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard con-taminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

8.5 Personal protective equipment
Respiratory protection

: No respiratory protection is ordinarily required under normal conditions of use.
In accordance with good industrial hygiene practices, precau-tions should be taken to avoid breathing of material.

If engineering controls do not maintain airborne concentra-tions to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the spe-cific conditions of use and meeting relevant legislation.

Check with respiratory protective equipment suppliers.

Where air-filtering respirators are suitable, select an appro-priate combination of mask and filter.

Select a filter suitable for the combination of organic gases and vapours [Type A/Type P boiling point >65°C (149°F)].

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8.6 Hand protection

Remarks	:	Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical re-sistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Appli-cation of a non-perfumed moisturizer is recommended. For continuous contact we recommend gloves with break-through time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.
Eye protection	:	If material is handled such that it could be splashed into eyes, protective eyewear is recommended.
Skin and body protection	:	Skin protection is not ordinarily required beyond standard work clothes. It is good practice to wear chemical resistant gloves.
Protective measures	:	Personal protective equipment (PPE) should meet recom-mended national standards. Check with PPE suppliers..

Environmental exposure controls

General advice	:	Take appropriate measures to fulfill the requirements of rele-vant environmental protection legislation. Avoid contamination of the environment by following advice given in Chapter 6. If necessary, prevent undissolved material from being dis-charged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water. Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour

9. Physical and chemical properties

9.1

Appearance	:	Liquid at room temperature.
Colour	:	light brown
Odor	:	Slight hydrocarbon.
Odour Threshold	:	Data not available
pH	:	Not applicable.
pour point	:	-33 °C / -27 °FMethod: ASTM D97
Initial Boiling Point andBoiling Range	:	> 280 °C / 536 °F estimated value(s)

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Flash point	:	230 °C / 446 °F Method: ASTM D92
Evaporation rate	:	Data not available
Flammability (solid, gas)	:	Data not available
Upper Explosion limits	:	Typical 1 - 10 %(V
Lower explosion limit	:	Typical 1 %(V)
Vapour pressure	:	< 0.5 Pa at 20 °C / 68 °F (estimated value(s)
Relative vapour density	:	> 1estimated value(s)
Relative density	:	0.875 at 15 °C / 59 °F
Density	:	875 kg/m^3 (15.0 °C / 59.0 °F) Method: ASTM D1298
Water solubility	:	Negligible.
Solubility in other solvents	:	Data not available
Partition coefficient: n-octanol/water	:	Pow: > 6(based on information on similar products)
Auto-ignition temperature	:	>320 °C / 608 °F
Viscosity		
Viscosity, dynamic	:	Data not available
Viscosity, kinematic	:	6.9 mm^2/s (100 °C / 212 °F) Method: ASTM D445 46 mm^2/s (40.0 °C / 104.0 °F) Method: ASTM D445
Conductivity	:	This material is not expected to be a static accumulator.
Decomposition temperature	:	Data not available

10. Stability and reactivity

10.1 Reactivity : The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.

10.2 Chemical stability : Stable.

10.3 Possibility of hazardous reac-tions

: Reacts with strong oxidising agents.

10.4 Conditions to avoid : Extremes of temperature and direct sunlight.

10.5 Incompatible materials

: Strong oxidising agents.

10.6 Hazardous decomposition products

: Hazardous decomposition products are not expected to form during normal storage.

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11. Toxicological information

11.1 Basis for Assessment

: Information given is based on data on the components and the toxicology of similar products.
Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

11.2 Information on likely routes of exposure

: Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

Acute toxicity

Product : Expected to be of low toxicity: LD50 > 5000 mg/kg ,Rat

Acute oral toxicity : LD50 (rat): > 5,000 mg/kg Remarks: Expected to be of low toxicity:

Acute Inhalation Toxicity
: Remarks: Not considered to be an inhalation hazard under normal conditions of use.

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg

Remarks: Expected to be of low toxicity:

11.3 Skin corrosion/irritation

Product

Remarks : Expected to be slightly irritating, Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

Serious eye damage/eye irritation

Product

Remarks : Expected to be slightly irritating.

Respiratory or skin sensitisation

Product

Remarks : Not expected to be a skin sensitiser.

Germ cell mutagenicity

Product

Remarks : Not considered a mutagenic hazard.

11.4 Carcinogenicity

Product

Remarks : Not expected to be carcinogenic.

Remarks : Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting studies., Highly refined mineral oils are not classified as carcinogenic by the Internation-al Agency for Research on Cancer (IARC).

IARC : No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH : No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcino-gen by ACGIH.

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OSHA : No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcino-gen by OSHA.

NTP : No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity
Product
Remarks : Not expected to impair fertility, Not expected to be a developmental toxicant

STOT - single exposure
Product
Remarks : Not expected to be a hazard.

STOT - repeated exposure
Product
Remarks : Not expected to be a hazard.

Aspiration toxicity
Product : Not considered an aspiration hazard.

11.5 Further information
Product
Remarks : Used oils may contain harmful impurities that have accumulated during use. The con-centration of such impurities will depend on use and they may present risks to health and the environment on disposal., ALL used oil should be handled with caution and skin contact avoided as far as possible.

12. Ecological information

Basis for assessment

: Ecotoxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the ecotoxicology of similar products. Unless indicated otherwise, the data presented is representa-tive of the product as a whole, rather than for individual com-ponent(s).(LL/EL/IL50 expressed as the nominal amount of product required to prepare aqueous test extract).

12.1 Ecotoxicity
Product
Toxicity to fish (Acute toxici-ty)
: Remarks: Expected to be practically non toxic:
LL/EL/IL50 > 100 mg/l
Toxicity to daphnia and other aquatic invertebrates (Acute toxicity)
: Remarks: Expected to be practically non toxic:
LL/EL/IL50 > 100 mg/l
Toxicity to algae (Acute tox-icity)
: Remarks: Expected to be practically non toxic:
LL/EL/IL50 > 100 mg/l
Toxicity to fish (Chronic tox-icity)
: Remarks: Data not available
Toxicity to daphnia and other aquatic invertebrates (Chron-ic toxicity)
: Remarks: Data not available

Toxicity to bacteria (Acute toxicity)
: Remarks: Data not available

12.2 Persistence and degradability

Product

Biodegradability : Remarks: Expected to be not readily biodegradable. Major constituents are expected to be inherently biodegrada-ble, but contains components that may persist in the environ-ment.

Bioaccumulative potential

Product

Bioaccumulation : Remarks: Contains components with the potential to bioac-cumulate.

Mobility in soil

Product

Mobility : Remarks: Liquid under most environmental conditions. If it enters soil, it will adsorb to soil particles and will not be mobile.

Remarks: Floats on water.

12.3 Other adverse effects

: no data available

Product

Additional ecological infor-mation
: Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemi-cal ozone creation potential or global warming potential.

Poorly soluble mixture. May cause physical fouling of aquatic organisms.

Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.

13. Disposal considerations

13.1 Disposal methods

Waste from residues : Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment.
Waste, spills or used product is dangerous waste.

Disposal should be in accordance with applicable regional, national, and local laws and regulations.
Local regulations may be more stringent than regional or na-tional requirements and must be complied with.

13.2 Contaminated packaging

: Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand. Disposal should be in accordance with applicable regional, national, and local laws and regulations.

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14. Transport information

National Regulations
US Department of Transportation Classification (49 CFR Parts 171-180)
: Not regulated as a dangerous good

International Regulation
IATA-DGR : Not regulated as a dangerous good

IMDG-Code : Not regulated as a dangerous good

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

Pollution category : Not applicable
Ship type : Not applicable
Product name : Not applicable
Special precautions : Not applicable

Special precautions for user
Remarks : Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

Additional Information
: MARPOL Annex 1 rules apply for bulk shipments by sea.

15. Regulatory information

15.1 OSHA Hazards : No OSHA Hazards

EPCRA - Emergency Planning and Community Right-to-Know Act
CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Xylene, Mixed Isomers	1330-20-7	100	*
Naphthalene	91-20-3	100	*

*: Calculated RQ exceeds reasonably attainable upper limit.

CERCLA Reportable Quantity
: Calculated RQ exceeds reasonably attainable upper limit., Shell classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reporta-ble under CERCLA, The components with RQs are given for information.

SARA 304 Extremely Hazardous Substances Reportable Quantity
: This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards
: No SARA Hazards
SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

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16. Other information

16.1 Further information : NFPA Rating (Health, Fire, Reac-tivity) 0, 1, 0

: Due to the conversion of this product to GHS classification and labelling, there has been a significant change to the nature of the information presented in chapter 2. A vertical bar (|) in the left margin indicates an amendment from the previous version.

16.2 Abbreviations and Acronyms

: The standard abbreviations and acronyms used in this docu-ment can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

ACGIH = American Conference of Governmental Industrial Hygienists
ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road
AICS = Australian Inventory of Chemical Substances
ASTM = American Society for Testing and Materials
BEL = Biological exposure limits
BTEX = Benzene, Toluene, Ethylbenzene, Xylenes
CAS = Chemical Abstracts Service
CEFIC = European Chemical Industry Council
CLP = Classification Packaging and Labelling
COC = Cleveland Open-Cup
DIN = Deutsches Institut fur Normung
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
DSL = Canada Domestic Substance List
EC = European Commission
EC50 = Effective Concentration fifty
ECETOC = European Center on Ecotoxicology and Toxicolo-gy Of Chemicals
ECHA = European Chemicals Agency
EINECS = The European Inventory of Existing Commercial Chemical Substances
EL50 = Effective Loading fifty
ENCS = Japanese Existing and New Chemical Substances Inventory
EWC = European Waste Code
GHS = Globally Harmonised System of Classification and Labelling of Chemicals
IARC = International Agency for Research on Cancer
IATA = International Air Transport Association
IC50 = Inhibitory Concentration fifty
IL50 = Inhibitory Level fifty
IMDG = International Maritime Dangerous Goods
INV = Chinese Chemicals Inventory
IP346 = Institute of Petroleum test method N° 346 for the determination of polycyclic aromatics DMSO-extractables
KECI = Korea Existing Chemicals Inventory
LC50 = Lethal Concentration fifty
LD50 = Lethal Dose fifty per cent.

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LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading
LL50 = Lethal Loading fifty
MARPOL = International Convention for the Prevention of Pollution From Ships
NOEC/NOEL = No Observed Effect Concentration / No Ob-served Effect Level
OE_HPV = Occupational Exposure - High Production Volume
PBT = Persistent, Bioaccumulative and Toxic
PICCS = Philippine Inventory of Chemicals and Chemical Substances
PNEC = Predicted No Effect Concentration
REACH = Registration Evaluation And Authorisation Of Chemicals
RID = Regulations Relating to International Carriage of Dan-gerous Goods by Rail
SKIN_DES = Skin Designation
STEL = Short term exposure limit
TRA = Targeted Risk Assessment
TSCA = US Toxic Substances Control Act
TWA = Time-Weighted Average
vPvB = very Persistent and very Bioaccumulative

16.3 SDS Effective Date : 01.06.2015

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.

Rotair Plus

ICD (International Compressor Distribution) nv

Chemwatch: **5249-86**
Version No: **4.1.1.1**
Safety Data Sheet according to WHS and ADG requirements

Issue Date: **15/11/2017**
Print Date: **07/02/2018**
L.GHS.AUS.EN

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier

Product name	Rotair Plus
Synonyms	Rotair Plus
Other means of identification	164

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

Relevant identified uses	Compressor oil

Details of the supplier of the safety data sheet

Registered company name	**ICD (International Compressor Distribution) nv**
Address	Boomsesteenweg 957 Wilrijk B-2610 Belgium
Telephone	+32 3 870 2111
Fax	+32 3 870 2903
Website	Not Available
Email	info.lubricants@icdcompany.com

Emergency telephone number

Association / Organisation	**Chemwatch**
Emergency telephone numbers	+800 2436 2255
Other emergency telephone numbers	Not Available

CHEMWATCH EMERGENCY RESPONSE

Primary Number	Alternative Number 1	Alternative Number 2
1800 039 008	1800 039 008	+612 9186 1132

Once connected and if the message is not in your prefered language then please dial 01

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

Poisons Schedule	S5
Classification	Not Applicable

Label elements

Hazard pictogram(s)	Not Applicable
SIGNAL WORD	**NOT APPLICABLE**

Hazard statement(s)

Not Applicable

Precautionary statement(s) Prevention

Not Applicable

Precautionary statement(s) Response

Not Applicable

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

Not Applicable

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
68411-46-1	<3	octylated diphenylamines
Not avail.	0.1-90	mineral oil
		* contains one or more of the following CAS-numbers (REACH registration numbers):
		64742-53-6 (01-2119480375-34), 64742-54-7 (01-2119484627-25),
		64742-55-8 (01-2119487077-29), 64742-56-9 (01-2119480132-48),
		64742-65-0 (01-2119471299-27), 68037-01-4 (01-2119486452-34),
		72623-86-0 (01-2119474878-16), 72623-87-1 (01-2119474889-13),
		8042-47-5 (01-2119487078-27), 848301-69-9 (01-0000020163-82)

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye Contact	▸ If in eyes, hold eyelids apart and flush the eye continuously with running water. ▸ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. ▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▸ Seek medical attention without delay; if pain persists or recurs seek medical attention. ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin contact occurs: ▸ Immediately remove all contaminated clothing, including footwear. ▸ Flush skin and hair with running water (and soap if available). ▸ Seek medical attention in event of irritation.
Inhalation	▸ If fumes, aerosols or combustion products are inhaled remove from contaminated area. ▸ Other measures are usually unnecessary.
Ingestion	▸ If swallowed do **NOT** induce vomiting. ▸ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. ▸ Observe the patient carefully. ▸ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. ▸ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. ▸ Seek medical advice. ▸ Avoid giving milk or oils. ▸ Avoid giving alcohol.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

▸ Heavy and persistent skin contamination over many years may lead to dysplastic changes. Pre-existing skin disorders may be aggravated by

- exposure to this product.
- In general, emesis induction is unnecessary with high viscosity, low volatility products, i.e. most oils and greases.
- High pressure accidental injection through the skin should be assessed for possible incision, irrigation and/or debridement.

NOTE: Injuries may not seem serious at first, but within a few hours tissue may become swollen, discoloured and extremely painful with extensive subcutaneous necrosis. Product may be forced through considerable distances along tissue planes.

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

Do not use a water jet to fight fire.

Special hazards arising from the substrate or mixture

Fire Incompatibility	▸ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Advice for firefighters

Fire Fighting	▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ Wear full body protective clothing with breathing apparatus. ▸ Prevent, by any means available, spillage from entering drains or water course. ▸ Use water delivered as a fine spray to control fire and cool adjacent area.
Fire/Explosion Hazard	▸ Combustible. ▸ Slight fire hazard when exposed to heat or flame. ▸ Heating may cause expansion or decomposition leading to violent rupture of containers. ▸ On combustion, may emit toxic fumes of carbon monoxide (CO). Combustion products include: , carbon dioxide (CO_2) , sulfur oxides (SOx) , other pyrolysis products typical of burning organic material.
HAZCHEM	Not Applicable

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	Slippery when spilt. ▸ Remove all ignition sources. ▸ Clean up all spills immediately. ▸ Avoid breathing vapours and contact with skin and eyes. ▸ Control personal contact with the substance, by using protective equipment.
Major Spills	Slippery when spilt. Moderate hazard. ▸ Clear area of personnel and move upwind. ▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ Wear breathing apparatus plus protective gloves.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling	The conductivity of this material may make it a static accumulator., A liquid is typically considered nonconductive if its conductivity is below 100 pS/m and is considered semi-conductive if its conductivity is below 10 000 pS/m., Whether a

	liquid is nonconductive or semi-conductive, the precautions are the same., A number of factors, for example liquid temperature, presence of contaminants, and anti-static additives can greatly influence the conductivity of a liquid. ▸ Containers, even those that have been emptied, may contain explosive vapours. ▸ Do NOT cut, drill, grind, weld or perform similar operations on or near containers. ▸ Electrostatic discharge may be generated during pumping - this may result in fire. ▸ Ensure electrical continuity by bonding and grounding (earthing) all equipment. ▸ Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (<=1 m/sec until fill pipe submerged to twice its diameter, then <= 7 m/sec). ▸ Avoid splash filling. ▸ Avoid all personal contact, including inhalation. ▸ Wear protective clothing when risk of exposure occurs. ▸ Use in a well-ventilated area. ▸ Prevent concentration in hollows and sumps.
Other information	▸ Store in original containers. ▸ Keep containers securely sealed. ▸ No smoking, naked lights or ignition sources. ▸ Store in a cool, dry, well-ventilated area.

Conditions for safe storage, including any incompatibilities

Suitable container	▸ Metal can or drum ▸ Packaging as recommended by manufacturer. ▸ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	Avoid contamination of water, foodstuffs, feed or seed. **CARE**: Water in contact with heated material may cause foaming or a steam explosion with possible severe burns from wide scattering of hot material. Resultant overflow of containers may result in fire. ▸ Avoid reaction with oxidising agents

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Exposure Standards	mineral oil	Oil mist, refined mineral	5 mg/m3	Not Available	Not Available	Not Available

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
Rotair Plus	Not Available	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
octylated diphenylamines	Not Available	Not Available
mineral oil	2500 mg/m3	Not Available

MATERIAL DATA

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.
Personal protection	
Eye and face protection	▸ Safety glasses with side shields ▸ Chemical goggles. ▸ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury

	▸ experience.
Skin protection	See Hand protection below
Hands/feet protection	Wear general protective gloves, eg. light weight rubber gloves. The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice. Personal hygiene is a key element of effective hand care.
Body protection	See Other protection below
Other protection	No special equipment needed when handling small quantities. **OTHERWISE:** ▸ Overalls. ▸ Barrier cream. ▸ Eyewash unit.
Thermal hazards	Not Available

Respiratory protection

Type A Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.
Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	A-AUS	-	A-PAPR-AUS / Class 1
up to 50 x ES	-	A-AUS / Class 1	-
up to 100 x ES	-	A-2	A-PAPR-2 ^

^ - Full-face
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Clear light brown liquid, slight hydrocarbon odour

Physical state	Liquid	**Relative density (Water = 1)**	0.868 @ 15 C
Odour	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	>320
pH (as supplied)	Not Applicable	**Decomposition temperature**	Not Available
Melting point / freezing point (°C)	Not Available	**Viscosity (cSt)**	46
Initial boiling point and boiling range (°C)	>280	**Molecular weight (g/mol)**	Not Applicable
Flash point (°C)	230	**Taste**	Not Available
Evaporation rate	Not Available	**Explosive properties**	Not Available
Flammability	Not Applicable	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	10	**Surface Tension (dyn/cm or mN/m)**	Not Available
Lower Explosive Limit (%)	1	**Volatile Component (%vol)**	0 (VOC)
Vapour pressure (kPa)	<0.0005 @ 20 C	**Gas group**	Not Available
Solubility in water (g/L)	Immiscible	**pH as a solution (1%)**	Not Applicable
Vapour density (Air = 1)	>1	**VOC g/L**	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	Product is considered stable and hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Inhalation hazard is increased at higher temperatures. Inhalation of oil droplets/ aerosols may cause discomfort and may produce chemical pneumonitis.
Ingestion	Ingestion may result in nausea, abdominal irritation, pain and vomiting
Skin Contact	The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis. Open cuts, abraded or irritated skin should not be exposed to this material The material may accentuate any pre-existing dermatitis condition Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
Eye	The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course. Principal route of exposure is by skin contact; lesser exposures include inhalation of fumes from hot oils, oil mists or droplets. Prolonged contact with mineral oils carries with it the risk of skin conditions such as oil folliculitis, eczematous dermatitis, pigmentation of the face (melanosis) and warts on the sole of the foot (plantar warts). With highly refined mineral oils no appreciable systemic effects appear to result through skin absorption. Exposure to oil mists frequently elicits respiratory conditions, such as asthma; the provoking agent is probably an additive. Repeated or prolonged exposure to mixed hydrocarbons may produce narcosis with dizziness, weakness, irritability, concentration and/or memory loss, tremor in the fingers and tongue, vertigo, olfactory disorders, constriction of visual field, paraesthesias of the extremities, weight loss and anaemia and degenerative changes in the liver and kidney. Chronic exposure by petroleum workers, to the lighter hydrocarbons, has been associated with visual disturbances, damage to the central nervous system, peripheral neuropathies (including numbness and paraesthesias), psychological and neurophysiological deficits, bone marrow toxicities (including hypoplasia possibly due to benzene) and hepatic and renal involvement. Chronic dermal exposure to petroleum hydrocarbons may result in defatting which produces localised dermatoses. Surface cracking and erosion may also increase susceptibility to infection by microorganisms. Repeated application of mildly hydrotreated oils (principally paraffinic), to mouse skin, induced skin tumours; no tumours were induced with severely hydrotreated oils.

Rotair Plus	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
octylated diphenylamines	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50: >2000 mg/kg[2]	Eye (rabbit): Non Irritant
		Skin (rabbit): Non Irritant [Bay]
mineral oil	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
Legend:	*1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances*	

MINERAL OIL	Toxicity and Irritation data for petroleum-based mineral oils are related to chemical components and vary as does the composition and source of the original crude. A small but definite risk of occupational skin cancer occurs in workers exposed to persistent skin contamination by oils over a period of years. This risk has been attributed to the presence of certain polycyclic aromatic hydrocarbons (PAH) (typified by benz[a]pyrene). Petroleum oils which are solvent refined/extracted or severely hydrotreated, contain very low concentrations of both.

Acute Toxicity	⊘	**Carcinogenicity**	⊘
Skin Irritation/Corrosion	⊘	**Reproductivity**	⊘
Serious Eye Damage/Irritation	⊘	**STOT - Single Exposure**	⊘
Respiratory or Skin sensitisation	⊘	**STOT - Repeated Exposure**	⊘
Mutagenicity	⊘	**Aspiration Hazard**	⊘

Legend: ✗ *– Data available but does not fill the criteria for classification*
✓ *– Data available to make classification*
⊘ *– Data Not Available to make classification*

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

Rotair Plus

ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
Not Available	Not Available	Not Available	Not Available	Not Available

octylated diphenylamines

ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
LC50	96	Fish	>281mg/L	2
EC50	48	Crustacea	>0.34mg/L	2
EC50	72	Algae or other aquatic plants	>0.008mg/L	2
NOEC	72	Algae or other aquatic plants	0.008mg/L	2

mineral oil

ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
Not Available	Not Available	Not Available	Not Available	Not Available

Legend: *Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data*

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
octylated diphenylamines	HIGH	HIGH

Bioaccumulative potential

Ingredient	Bioaccumulation
octylated diphenylamines	LOW (BCF = 5.5)

Mobility in soil

Ingredient	Mobility
octylated diphenylamines	LOW (KOC = 28640000)

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal	▸ **DO NOT** allow wash water from cleaning or process equipment to enter drains. ▸ It may be necessary to collect all wash water for treatment before disposal. ▸ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▸ Where in doubt contact the responsible authority. ▸ Recycle wherever possible or consult manufacturer for recycling options. ▸ Consult State Land Waste Authority for disposal. ▸ Bury or incinerate residue at an approved site. ▸ Recycle containers if possible, or dispose of in an authorised landfill.

SECTION 14 TRANSPORT INFORMATION

Labels Required

Marine Pollutant	NO
HAZCHEM	Not Applicable

Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

SECTION 15 REGULATORY INFORMATION

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

OCTYLATED DIPHENYLAMINES(68411-46-1) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Inventory of Chemical Substances (AICS)

MINERAL OIL(NOT AVAIL.) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Exposure Standards
Australia Hazardous Substances Information System - Consolidated Lists
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

National Inventory	Status
Australia - AICS	N (mineral oil)
Canada - DSL	N (mineral oil)
Canada - NDSL	N (octylated diphenylamines; mineral oil)
China - IECSC	N (mineral oil)
Europe - EINEC / ELINCS / NLP	N (mineral oil)
Japan - ENCS	N (mineral oil)
Korea - KECI	N (mineral oil)
New Zealand - NZIoC	N (mineral oil)
Philippines - PICCS	N (mineral oil)
USA - TSCA	N (mineral oil)
Legend:	*Y = All ingredients are on the inventory* *N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)*

SECTION 16 OTHER INFORMATION

Other information

Ingredients with multiple cas numbers

Name	CAS No
octylated diphenylamines	68411-46-1, 37338-62-8, 101-67-7

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are

Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
PC—STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit。
IDLH: Immediately Dangerous to Life or Health Concentrations
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index