Material Safety Data Sheet
According to Regulation (EC) No. 1907/2006

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

1.1.1 Identification on the label / trade name

Trade Name: AVISTA Fuel EX

1.1.2 REACH registration number
The substance must not be registered according to REACH (article 2.7 d).

1.1.3 Main use of this product
Fuel, extract for further processing

1.1.4 Product registration number – Denmark: 2235517

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

1.2.1 Identified uses

Recommendation:
Fuel, extract for further processing
Consideration of CONCAWE's suggested identified uses.

1.2.2 Uses advised against
Not applicable.

1.3. Details of the supplier of the safety data sheet
AVISTA OIL Danmark A/S
Juelsmindevej 6 – 18
4400 Kalundborg
Dänemark
Telefon +45 59 56 56 44
Fax +45 59 56 56 88

E-Mail (fachkundige Person): msds@avista-oil.de

1.4. Emergency telephone number (only during business hours, Mo - Thu 9 - 15, Fr 9 - 12)
Telefon: +49 (0) 5177 / 85 - 100 (Frau Dr. Ohnesorge)
E-Mail: msds@avista-oil.de

2. Hazardous Identification

2.1. Classification of the substance or mixture

2.1.1 Regulation (EC) No. 1272/2008 (CLP)
Carc. 1B Carcinogenicity category 1B
H350 May cause cancer.

2.1.2 67/548/EEC or 1999/45/EC
Carc. Cat. 2 Carcinogenicity category 2
R45 May cause cancer.

2.1.3 Additional hints
Fire and explosion hazard: Low risk.
Product can form only explosive mixtures or burn, if it is heated up on temperatures above the flash point.

2.2. Label elements

Pictogram:

Signal word:
Danger

Hazards Statements:
H350 May cause cancer.

Precautionary Statements:
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P281 Use personal protective equipment as required.
P308+313 IF exposed or concerned: Get medical advice/attention.
P405 Store locked up.
P501 Dispose of contents/container to ….

Contains:
Extracts (petroleum), light paraffinic distillate solvent

2.3. Other hazards
See also sections 11, 12 and 15.

3. Composition / information on Ingredients

3.1. Substances

3.1.1 General description
High-boiling mineral oil hydrocarbon mixture

3.1.2 Hazard ingredients

Chemical name	***EG-No. CAS-No. Index-No. Reg.-No.***	***Conc. [%]***	***Classification according Regulation (EC) No 1272/2008***	***Classification according 67/548/EEC***
Extracts (petroleum), light paraffinic distillate solvent	265-104-2 64742-05-8 649-003-00-4 ---	≥ 99 - 100	Carc. 1B; H350	Carc. Cat. 2; R45
Benzo[a]pyrene	200-028-5 50-32-8 601-032-00-3 ---	< 0.025	Carc. 1B; H350 Muta. 1B; H340 Repr. 1B; H360FD Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	Carc. Cat. 2;R45 Muta. Cat. 2;R46 Repr. Cat. 2;R60-61 R43 N; R50-53

3.1.3 Additional hints
Full text of hazard symbols and R-phrases: see section 16.

3.2. Mixtures

3.2.1 General description
Not applicable. The product is a substance.

3.2.2 Hazard ingredients
Not applicable. The product is a substance.

3.2.3 Additional hints
Not applicable. The product is a substance.

4. First Aid Measures

4.1. Description of first aid measures

4.1.1 In case of inhalation
Provide affected person with fresh air. In case of accident or illness/indisposition, seek medical advice immediately (show doctor directions for use or safety data sheet if possible).

4.1.2 In case of skin contact
After skin contact, wash immediately with soap and plenty of water, remove contaminated, saturated clothing. In case of skin irritation (redness etc.), consult a doctor.

4.1.3 In case of eye contact
In case of eye contact, rinse immediately thoroughly with plenty of water and if necessary consult a doctor. Carry along safety data sheet.

4.1.4 In case of ingestion
Do not induce vomiting, consult a doctor immediately. Observe risk of aspiration.

4.2. Most important symptoms and effects, both acute and delayed
No data available.

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

5. Fire Fighting Measures

5.1. Extinguishing media

5.1.1 Suitable extinguishing media
Carbon dioxide
Foam
Water spray jet
Dry fire-extinguishing media

5.1.2 Extinguishing media which must not be used for safety reasons
Full water jet

5.2. Special hazards arising from the substance or mixture
Formation of ignitable vapour/air mixtures possible.
Hot product may produce flammable vapours.

Substances potentially set free in case of fire:
Toxic pyrolysis products
Oil vapour
Smoke
Carbon oxides
Sulphur oxides
Aldehydes
Hydrocarbons

5.3. Advice for firefighters
Wear self-contained breathing apparatus.
According to extend of fire wear full protective clothing if necessary.
Dispose contaminated fire extinguishing water according to official directives.

5.3.1 Fire class (EN 2)
B (fires involving flammable or combustible liquids)

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Provide adequate ventilation.
Keep away from sources of ignition, do not smoke.
Avoid eye and skin contact as well as inhalation.
Do not put any rags impregnated with the product into your trouser pockets.
Attention, risk of slipping.

6.2. Environmental precautions
Contain spillage.
Do not allow to enter drains.
Avoid entering surface waters or groundwater as well as into soil.

6.3. Methods and material for containment and cleaning up
Absorb with liquid-binding material (e.g. general-purpose binder), treat recovered material as prescribed in section 13.

6.4. Reference to other sections
See section 13. As well as personal protective equipment see section 8.

7. Handling and Storage

7.1. Precautions for safe handling

7.1.1 Hints for safe handling
See section 6.1.
Avoid eye and skin contact.
Avoid formation of oil spray.
Keep away from sources of ignition - refrain from smoking.
Wash hands before breaks and on finishing work.
Apply the general hygienic measures for handling of chemicals.
Pay attention to the indications on the label and to the instructions for use.
Do not heat up to temperatures near flashpoint (T > 150°C).
Possibly take precautionary measures against electrostatic loading.
Possibly take precautionary measures against risk of explosion.

7.2. Conditions for safe storage, including any incompatibilities

7.2.1 Requirements for storage rooms and vessels
Do not store product in alley ways and staircases.
Store only in original container and keep locked up.
Do not store together with fire promoting or spontaneously combustible substances.

7.2.2 Further information on storage conditions
See section 10.2.
Keep locked up and avoid humidity.
Do store in a cool place.
Do not store at temperatures exceeding 80°C.
Storage class acc. to VCI: 10

7.3. Specific end use(s)
Observe technical data sheet.

8. Exposure controls / Personal protection

8.1. Control parameters

8.1.1 Exposure limit values

8.1.1.1 Air limit values

Limit value type (country of origin)	Substance name	EG-Nr. CAS-Nr.	Limit Value	Remark
TLV-ACGIH	Mineral Oil Mist	--- ---	5 mg/m³	
TRK	Benz[a]pyrene	200-028-5 50-32-8	0.002 mg/m² 0.005 mg/m³	

8.1.1.2 Biological limit values
No data available.

8.1.1.3 Additional exposure limits under the conditions of use
No data available.

8.2. Exposure controls

8.2.1. Occupational exposure controls

8.2.1.1 Product related measures to prevent exposure
No data available.

8.2.1.2 Instructual measures to prevent exposure
No data available.

8.2.1.3 Organisational measures to prevent exposure
No data available.

8.2.1.4 Technical measures to prevent exposure
Ensure sufficient aeration. This can be achieved by local exhaust ventilation or general exhaust air.
If this is not sufficient to keep concentrations below AGW-values suitable respiratory protection apparatus has to be worn.

8.2.1.5 Personal protection equipment

Respiratory protection:
Not required in normal case.
In case of mineral oil mist formation, in case of vapour formation: Filter A - P2 (EN 141)

Hand protection:
Suitable are for example hand gloves from the company KCL GmbH, D-36124 Eichenzell, e-mail: vertrieb@kcl.de with the following specification (test according to EN374):
In full contact / splash contact:

	Product name	Glove material	Layer thickness (min.)	Breakthrough time
731	Camatril	Nitril	0,33 mm	480 min
740	Dermatril	Nitril	0,11 mm	30 min

The protective gloves to be used must comply with the specifications of EC directive 89/686/EEC and the resultant standard EN374. The breakthrough times stated above were determined by KCL in laboratory tests according to EN374 and are only authoritative for the recommended glove types.
Skin cream is recommendable.

Additional information regarding to hand protection:
No test has been carried out. The choices for the preparations have been selected to the best of one's knowledge and the information about the ingredients. The choices for substances have been derived from the specifications of the glove manufacturers. The final selection of the glove material has to take into account the breakthrough times, the permeation rates and the degradation. The selection of a suitable glove is not only depending on the material, but also on quality characteristics and can differ from manufacturer to manufacturer. The durability of glove materials can't be pre-estimated for preparations and therefore has to be verified before use. The exact breakthrough time of the glove material can be received from the manufacturer and has to be observed.

Eye protection:
If there is a risk of eye contact: Eye glasses with side protection (EN 166).

Protective clothing*:*
Protective clothing (e.g. safety shoes EN 344, work clothes with long sleeves).
According to working process wear Apron, Boots (EN 347).

8.2.2 Environmental exposure controls

8.2.2.1 Product related measures to prevent exposure
No data available.

8.2.2.2 Instructual measures to prevent exposure
No data available.

8.2.2.3 Organisational measures to prevent exposure
No data available.

8.2.2.4 Technical measures to prevent exposure
See section 6.

8.2.3 Consumer exposure control

8.2.3.1 Measures related to consumer uses of the substance (as such or in preparations)
No data available.

8.2.3.2 Measures related to the service life of the substance in articles
No data available.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

9.1.1 Physical and chemical properties

Physical state:	Liquid
Colour:	Yellow-brown
Odour:	Characteristic

9.1.2 Safety relevant basis data

Boiling point / Boiling range:	≥ 300 °C	
Flashpoint:	> 150 °C	DIN ISO 2592
Ignition Temperature:	> 250 °C	ASTM E 659
Lower explosion limit:	In case of formation of oil sprays, ~ 0.6 Vol%	
Upper explosion limit:	In case of formation of oil sprays, ~ 6.5 Vol%	
Vapour pressure:	1013 mbar @ 300 °C	
Relative Density:	920 - 950 kg/m³ @ 15 °C	DIN 51757
Water solubility:	Almost insoluble	
Partition coefficient (n-octanol/water):	No data available.	
Vapour density (air = 1):	Vapours, heavier than air	
Viscosity:	40 - 90 mm²/s @ 40 °C 7 – 9 mm²/s @ 100 °C	DIN 51562

9.2. Other information
No data available.

10. Stability and Reactivity

10.1. Reactivity
See section 9.

10.2. Chemical stability
If product is stored and handled as prescribed it is stable.

10.3. Possibility of hazardous reactions
Formation of ignitable vapours/gases possible: > 150°C.

10.4. Conditions to avoid
Avoid contact with strong oxidizing agents.
See section 7.

10.5. Incompatible materials
No data available.

10.6. Hazardous decomposition products
See section 5.3.

11. Toxicological information

11.1. Information on toxicological effects

11.1.1 Acute toxicity and immediately occurring effects

	Effect dose		Value	Spezies	Remark
Oral	LD50	mg/kg	No data available.	Rat	---
Inhalation	LC50	mg/L (4h)	No data available.	Rat	---
Dermal	LD50	mg/kg	No data available.	Rabbit	---
Eyes	---	---	No data available.	Rabbit	---

11.1.2 Delayed occurring and chronic effects

Effect	Value	Method	Remark
Sensitizing effects	No data available.	---	---
Carcinogenic effects	Carc. Cat. 2 (67/548/EWG)	---	---
Mutagenic effects	No data available.	---	---
Reproductive effects	No data available.	---	---
Narcotic effects	No data available.	---	---

11.2 Other information

It can occur:
Eye irritation.

In case of prolonged exposure:
Skin dehydration.
Skin irritation.
Dermatitis.

12. Ecological information

12.1. Toxicity

Benzo[a]pyrene

Aquatic toxicity	Parameter	Exposure time	Value	Remark
Acute fish toxicity	LC50	96 h	---	---
Acute daphnia toxicity	EC50	48 h	0.25 mg/L	Literature,Daphnia magna
Acute algae toxicity	IC50	72 h	0.02 mg/L	Literature,Pseudokirchneriella subcapitata

12.2. Persistence and degradability
Not readily biodegradable (according to OECD criteria)
Inherently biodegradable (main ingredient indication)

12.3. Bioaccumulative potential
No data available.

12.4. Mobility in soil
No data available.

12.5. Results of PBT and vPvB assessment

Behaviour in waste water treatment plants:
Can be separated mechanically.

12.6. Other adverse effects
No data available.

13. Disposal considerations

13.1. Waste treatment methods

13.1.1 Appropriate disposal / product
Saturated contaminated cloth, paper or other organic material pose a fire danger and have to be collected and disposed in a controlled way.

Waste code EC:
16 03 05 – Organic wastes containing dangerous substances
The named waste codes are recommendations because of the likely use of this product.
Due to specific use and disposal circumstances at the user other waste codes may be suitable.

Recommendation:
Observe official regulations.

13.2 Appropriate disposal / packaging
See section 13.1
Observe official regulations.
Non-contaminated packages can be reused.
Packages that cannot be cleaned have to be disposed like the product.

14. Transport information

14.1. UN number
Not classified.

14.2. UN proper shipping name
Not classified.

14.3. Transport hazard class(es)
Not classified.

14.4. Packing group
Not classified.

14.5. Environmental hazards
Not classified.

14.6. Special precautions for user
Not classified.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
No data available.

15. Regulatory information

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

15.1.1 National Regulations (Germany)

WGK:	Extremely water hazardous (WGK – 3, self-classification, VwVwS)
TA-Luft:	No data available.
Additions:	No data available.
Observe restrictions:	Observe youth labour law. Observe law on the protection of expectant and nursing mothers.

15.2 Chemical safety assessment
No data available.

16. Other information

16.1 R-phrases named in item 3

H317	May cause an allergic skin reaction.
H340	May cause genetic defects.
H350	May cause cancer.
H360FD	Kann die Fruchtbarkeit beeinträchtigen. Kann das Kind im Mutterleib schädigen.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
R43	May cause sensitization by skin contact.
R45	May cause cancer.
R46	May cause heritable genetic damage.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R60	May impair fertility.
R61	May cause harm to the unborn child.

16.2 Additional information

This information refers to the product in delivery condition.
Revised particulars: 1 - 16

Legend

ACGIH:	American Conference of Governmental Industrial Hygienists
AGW:	Occupational exposure limit value (Arbeitsplatzgrenzwert)
AOX:	Adsorbable Organohalogens
BGW:	Biological Limit Value (Biologischer Grenzwert)
VbF:	Regulation concerning flammable liquids (Verordnung über brennbare Flüssigkeiten)
TLV:	Threshold Limit Value (Schwellenwert)
TRbF:	Technical guideline for flammable liquids (Technische Regeln für brennbare Flüssigkeiten)
VCI:	(Verband der chemischen Industrie)
VOC:	Volatile organic compounds
VwVwS:	Regulation for non-hazardous to water substances (Verwaltungsvorschrift wassergefährdende Stoffe, German regulation)
WGK:	Water hazard class (Wassergefährdungsklasse)

The information herein are to describe the product with regard to the required safety precautions, they do not intend to assure certain properties and are based upon today's standard of knowledge.

Liability excluded.