

APPENDIX 3.1
JET A1 SAFETY DATA SHEET

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| | SAFETY DATA SHEET | Page : 1 |
| | | Revision nr : |
| | JET A1 | Issuing date : 01/10/2010 |
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1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Commercial Product Name : JET A1
 Chemical name of the substance : Jet A-1
 Specific use(s) : Fuel
 Company : Topaz Energy
 Topaz House Beech Hill Clonskeagh
 -Dublin 4, Ireland
 Tel.:+353 1 202 8888
 Fax:+353 1 203 9888
 E-mail:safetydatasheets@topazenergy.ie
 Emergency telephone number : +353 1 808 8232

2. HAZARDS IDENTIFICATION

Classification : The product is classified as dangerous in accordance with Directive 1999/45/EC.



Xn : Harmful



N : Dangerous for the environment

Most important hazards : R10 - Flammable.
 R38 - Irritating to skin.
 R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
 R65 - Harmful: may cause lung damage if swallowed.

CLP-Classification : The product is classified as dangerous in accordance with Directive 1272/2008/EEC.



Signal word : Danger

CLP Hazard statements : H226 - Flammable liquid and vapour.
 H304 - May be fatal if swallowed and enters airways.
 H315 - Causes skin irritation.
 H336 - May cause drowsiness or dizziness.
 H411 - Toxic to aquatic life with long lasting effects.

Main symptoms
 Inhalation : May cause irritation of respiratory tract.
 Cough
 Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

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| | Inhalation of high vapour concentrations can cause CNS-depression and narcosis. |
| Skin contact | : Irritating to skin. Redness Repeated exposure may cause skin dryness or cracking. |
| Eye contact | : May cause eye irritation. Redness Repeated or prolonged exposure: Inflammation Ulceration |
| Ingestion | : Smallest quantities reaching the lungs through swallowing or subsequent vomiting may result in lung oedema or pneumonia. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. |
| Environmental properties | : Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Substance name | Values (%) | CAS no | EC No | EC Index | Symbol(s): | R-phrase(s) |
|---|------------|------------|-----------|--------------|------------|-----------------------|
| Kerosine (petroleum), hydrodesulfurized | 0 - 100 | 64742-81-0 | 265-184-9 | 649-423-00-8 | Xn, N | R10, R38, R51/53, R65 |
| Napthalene | 0 - 0,5 | 91-20-3 | 202-049-5 | 601-052-00-2 | Xn, N | R22, R50/53, R40 |
| Ethylbenzene | 0 - 0,5 | 100-41-4 | 202-849-4 | 601-023-00-4 | F, Xn | R11, R20 |
| Kerosine (petroleum) | 0 - 100 | 8008-20-6 | 232-366-4 | 649-404-00-4 | Xn, N | R10, R38, R65, R51/53 |

Full text of R-phrases: See section 16.

| Substance name | Values (%) | CAS no | EC No | EC Index | CLP pictograms | CLP Hazard statements |
|---|------------|------------|-----------|--------------|-------------------------|----------------------------|
| Kerosine (petroleum), hydrodesulfurized | 0 - 100 | 64742-81-0 | 265-184-9 | 649-423-00-8 | GHS02,GHS07,GHS08,GHS09 | H226,H304, H315,H336, H411 |
| Napthalene | 0 - 0,5 | 91-20-3 | 202-049-5 | 601-052-00-2 | GHS09,GHS08 | H302,H351, H410 |
| Ethylbenzene | 0 - 0,5 | 100-41-4 | 202-849-4 | 601-023-00-4 | - | - |
| Kerosine (petroleum) | 0 - 100 | 8008-20-6 | 232-366-4 | 649-404-00-4 | GHS02,GHS07,GHS08,GHS09 | H226,H304, H315,H336, H411 |

Full text of the H-statements: See section 16.

4. FIRST AID MEASURES

First aid measures

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| Inhalation | : <i>May cause irritation of respiratory tract.- Cough- Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.- Inhalation of high vapour concentrations can cause CNS-depression and narcosis.</i> |
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- Move to fresh air.
Keep at rest.
In case of shortness of breath, give oxygen.
- Skin contact** : *Irritating to skin.- Redness- Repeated exposure may cause skin dryness or cracking.*
Take off contaminated clothing and shoes immediately.
After contact with skin, wash immediately with plenty of soap and water.
If skin irritation persists, call a physician.
- Eye contact** : *May cause eye irritation.- Redness- Repeated or prolonged exposure: - Inflammation- Ulceration*
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
If pain persists, call a physician.
- Ingestion** : *Smallest quantities reaching the lungs through swallowing or subsequent vomiting may result in lung oedema or pneumonia.- Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.*
Call a physician immediately.
Do NOT induce vomiting.
Rinse mouth.
Drink plenty of water.
Never give anything by mouth to an unconscious person.
- Additional advice** : Show this safety data sheet to the doctor in attendance.
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

- Fire Hazard** : Flammable.
- Suitable extinguishing media** : Dry chemical
Carbon dioxide (CO₂)
Water spray
Foam
- Extinguishing media which shall not be used for safety reasons** : High volume water jet
- Specific hazards** : The pressure in sealed containers can increase under the influence of heat.
Fire or intense heat may cause violent rupture of packages.
In the event of fire, cool tanks with water spray.
Vapours may form explosive mixtures with air.
Vapours are heavier than air and may spread along floors.
Flash back possible over considerable distance.
Burning produces noxious and toxic fumes.
In case of fire hazardous decomposition products may be produced such as:
Carbon oxides
nitrogen oxides (NO_x)
Sulphur oxides
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for fire-fighters** : In the event of fire, wear self-contained breathing apparatus.
Wear personal protective equipment.

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6. ACCIDENTAL RELEASE MEASURES

- Personal precautions : Evacuate personnel to safe areas.
Keep people away from and upwind of spill/leak.
Avoid contact with skin and eyes.
Do not breathe vapours or spray mist.
Wear personal protective equipment.
See also section 8.
- Environmental precautions : Do not flush into surface water or sanitary sewer system.
- Methods for cleaning up : Remove all sources of ignition.
Do not smoke.
Ensure adequate ventilation.
Clean-up methods - small spillage
Prevent further leakage or spillage if safe to do so.
Soak up with inert absorbent material.
Dispose of in accordance with local regulations.
After cleaning, flush away traces with water.
Clean-up methods - large spillage
Keep people away from and upwind of spill/leak.
Prevent further leakage or spillage if safe to do so.
Dam up.
Hose down gases, fumes and/or dust with water.
Collect and dispose of waste product at an authorised disposal facility.
After cleaning, flush away traces with water.
Local authorities should be advised if significant spillages cannot be contained.
Sweep up and shovel into suitable containers for disposal.

7. HANDLING AND STORAGE

- Storage : Keep containers tightly closed in a dry, cool and well-ventilated place.
Store in original container.
Keep in a banded area.
Keep away from open flames, hot surfaces and sources of ignition.
Do not store near or with any of the incompatible materials listed in section 10.
Keep away from food, drink and animal feedingstuffs.
- Handling : Handle in accordance with good industrial hygiene and safety practice.
Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours).
Ensure all equipment is electrically grounded before beginning transfer operations.
Do not use pressure to empty drums.
Do not smoke.
Avoid contact with skin, eyes and clothing.
Do not breathe vapours or spray mist.
Wear personal protective equipment.
See also section 8.
Ensure adequate ventilation.
When using do not eat or drink.
Do not pierce or burn, even after use. Do not spray on a naked flame or any incandescent material.
Do not burn, or use a cutting torch on, the empty drum.
- Packaging material : glass,metal containers,Plastic jerrican
- Specific use(s) : Fuel

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Personal protective equipment

Respiratory protection : In case of insufficient ventilation wear suitable respiratory equipment. respirator with A filter

Hand protection : Nitrile rubber
Neoprene gloves
EN374
The selection of specific gloves for a specific application and time of use in a working area, should also take into account other factors on the working space, such as (but not limited to): other chemicals that are possibly used, physical requirements (protection against cutting/drilling, skill, thermal protection), and the instructions/specification of the supplier of gloves.

Eye protection : Safety glasses with side-shields conforming to EN166
Goggles

Skin and body protection : chemical-resistant overalls
Chemical resistant apron

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product. Remove and wash contaminated clothing before re-use. Eye wash bottle with pure water

Engineering measures : Ensure adequate ventilation.

Environmental exposure controls : Do not flush into surface water or sanitary sewer system.

Exposure limit(s)

Component : **Kerosine (petroleum), hydrodesulfurized (64742-81-0)**

TLV-TWA (mg/m³) : 200 (BE, PT) ; 250 (SE); 250 (UT4, Kraftstoff, DE)

Component : **Napthalene (91-20-3)**

TLV-TWA (ppm) : 10 (PT)

TLV-TWA (mg/m³) : 50 (EE; FR; EL; HU; LV; LT; LU; NL; SI; SK; CZ; SE; CH); 53 (BE; ES); 20 (PL); 5 (FI)

TLV-STEL (ppm) : 15 (PT)

TLV-STEL (mg/m³) : 80 (BE; NL; ES); 100 (CZ); 75 (PL); 10 (FI)

Component : **Ethylbenzene (100-41-4)**

TLV-TWA (ppm) : 100 (PT)

TLV-TWA (mg/m³) : 442 (BE, HU, LV, LU, SK, LT, SI), 215 (NL), 200 (SE, CZ); 435 (EL, BG); 440 (DE); 217 (DK); 220 (FI); 100 (PL); 441 (ES, UK); 20 (NO); 88,4 (FR)

TLV-STEL (ppm) : 125 (PT)

TLV-STEL (mg/m³) : 350 (PL); 430 (NL); 435 (CH); 442 (FR); 450 (SE, EE); 551 (BE); 500 (CZ); 545 (EL); 552 (UK, BU); 880 (FI); 884 (HU, LV, LU, SK, ES, LT)

Component : **Kerosine (petroleum) (8008-20-6)**

TLV-TWA (mg/m³) : 200 (BE, ES) ; 100 (PL); 250 (UT4, Kraftstoff, DE)

TLV-STEL (mg/m³) : 300 (PL)

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

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|--|---|--------------------------------------|
| Colour | : | colourless,Pale coloured,yellow |
| Odour | : | hydrocarbon-like |
| pH | : | Not applicable |
| Boiling point/boiling range | : | 150 - 300 °C |
| Melting point/range | : | not applicable |
| Flash point | : | > 38 °C (Abel) |
| Decomposition temperature | : | No data available |
| Autoignition temperature | : | > 190 °C |
| Flammability (solid, gas) | : | not applicable |
| Explosive properties | : | LEL 0,6 vol% - UEL 7 vol% |
| Oxidizing properties | : | not applicable |
| Evaporation rate | : | No data available |
| Vapour pressure | : | 0,1-30 @ 20°C hPa |
| Vapour density | : | >1 |
| Water solubility | : | insoluble |
| Viscosity | : | < 8 mm ² /s (20°C) |
| Density | : | 0.77 - 0.84 g/cm ³ (15°C) |
| Partition coefficient: n-octanol/water | : | 2 - 6 |

10. STABILITY AND REACTIVITY

| | | |
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| Stability | : | Stable under normal conditions. |
| Hazardous decomposition products | : | Burning produces noxious and toxic fumes. Possible decomposition products are: Carbon oxides |
| Incompatible materials | : | Oxidizing agents |
| Conditions to avoid | : | Heat, flames and sparks. |

11. TOXICOLOGICAL INFORMATION

General Information

Acute toxicity

| | | |
|------------------------|---|---|
| Component | : | Kerosine (petroleum), hydrodesulfurized (64742-81-0) |
| LD50/oral/rat | : | > 5000 mg/kg |
| LD50/dermal/rabbit | : | > 2000 mg/kg |
| LC50/inhalation/4h/rat | : | > 5,2 mg/l/4h |

| | | |
|------------------|---|-----------------------------|
| Component | : | Napthalene (91-20-3) |
| LD50/oral/rat | : | >= 2000 mg/kg |
| LD50/dermal/rat | : | > 2500 mg/kg |

| | | |
|------------------------|---|--------------------------------|
| Component | : | Ethylbenzene (100-41-4) |
| LD50/oral/rat | : | 3500 mg/kg |
| LD50/dermal/rabbit | : | 15354 mg/kg |
| LC50/inhalation/4h/rat | : | 17,2 mg/l/4h |

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Component : **Kerosine (petroleum) (8008-20-6)**

LD50/oral/rat : > 5000 mg/kg

LD50/dermal/rabbit : > 2000 mg/kg

LC50/inhalation/4h/rat : > 5,28 mg/l/4h

- Inhalation : May cause irritation of respiratory tract.
Cough
Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.
Inhalation of high vapour concentrations can cause CNS-depression and narcosis.
- Skin contact : Irritating to skin.
Redness
Repeated exposure may cause skin dryness or cracking.
- Eye contact : May cause eye irritation.
Redness
Repeated or prolonged exposure:
Inflammation
Ulceration
- Ingestion : Smallest quantities reaching the lungs through swallowing or subsequent vomiting may result in lung oedema or pneumonia.
Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.
- Chronic toxicity
Chronic toxicity : Chronic exposure
Liver and kidney injuries may occur.
Blood disorder may occur after prolonged inhalation.
Repeated exposure may cause skin dryness or cracking.
- Sensitisation : No sensitization responses were observed.
- carcinogenic effects : No adverse effects are expected.
- Mutagenicity : No adverse effects are expected.
- Reproductive toxicity : No adverse effects are expected.

12. ECOLOGICAL INFORMATION

Ecotoxicity effects : Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Component : **Kerosine (petroleum), hydrodesulfurized (64742-81-0)**

LC50/96h/fish : 45 mg/l (Pimephales Promelas); 1740 mg/l (Lepomis macrochirus)

Component : **Napthalene (91-20-3)**

LC50/96h/fish : 1,99 mg/l (Pimephales promelas)

Component : **Ethylbenzene (100-41-4)**

LC50/96h/fish : 12,1 mg/l (Pimephales promelas); 94,44 mg/l (Carassius auratus); 97,1 mg/l (Lebistes reticulatus)

EC50/48h/daphnia : 1,8 - 2,4 mg/l (Daphnia magna)

IC50/72h/algae : 4,6 mg/l (Selastrum capricornutum)

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Mobility : This telephone number is available 24 hours per day, 7 days per week.

Persistence and degradability : No data available

Bioaccumulation : May cause bioaccumulation.
Partition coefficient: n-octanol/water : 2 - 6

Further information : Prevent product from entering drains.
Dispose of as hazardous waste in compliance with local and national regulations.


13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products : Where possible recycling is preferred to disposal or incineration.
Do not burn, or use a cutting torch on, the empty drum.
Dispose of in accordance with local regulations.
Empty containers should be transported/delivered using a registered waste carrier to local recyclers for disposal.

Additional ecological information : Do not flush into surface water or sanitary sewer system.

Codes of waste (2001/573/EC, 75/442/EEC, 91/689/EEC) : The following Waste Codes are only suggestions:
13 07 03* - other fuels (including mixtures)
15 01 10* - packaging containing residues of or contaminated by dangerous substances
Waste codes should be assigned by the user based on the application for which the product was used.

14. TRANSPORT INFORMATION

ADR danger labels : 

ADR/RID

Proper shipping name : KEROSENE

UN-No : 1223

Class : 3

Packing group : III

ADNR

ADNR class : 3 - Flammable liquids

ADNR classification code : F1

ADNR UN number : 1223

IMDG

Proper shipping name : KEROSENE

UN-No : 1223

Class : 3

Packing group : III

EmS : F-E ; S-E

IMDG Limited Quantities : 5 L

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ICAO/IATA

Proper shipping name : KEROSENE
UN-No : 1223
Class : 3
UN packing group : III

Other information (transport) : Tunnel restriction code C/E


15. REGULATORY INFORMATION

Classification : The product is classified as dangerous in accordance with Directive 1999/45/EC.

Commercial Product Name : JET A1

Chemical name of the substance : Jet A-1


Contains : Kerosine (petroleum)

Symbol(s): : 
Xn N
Xn - Harmful
N - Dangerous for the environment

R-phrase(s) : R10 - Flammable.
R38 - Irritating to skin.
R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R65 - Harmful: may cause lung damage if swallowed.

S-phrases : S23 - Do not breathe gas/fumes/vapour/spray.
S24 - Avoid contact with skin.
S61 - Avoid release to the environment. Refer to special instructions/Safety data sheets.
S62 - If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.
S43 - In case of fire, use foam, dry powder or sand

CLP-Classification : The product is classified as dangerous in accordance with Directive 1272/2008/EEC.

CLP pictograms : 

Signal word : Danger

CLP Hazard statements : H226 - Flammable liquid and vapour.
H304 - May be fatal if swallowed and enters airways.
H315 - Causes skin irritation.
H336 - May cause drowsiness or dizziness.
H411 - Toxic to aquatic life with long lasting effects.

CLP Precautionary statements : P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.

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P273 - Avoid release to the environment
P331 - Do NOT induce vomiting
P301+P310 - If swallowed, immediately call a doctor.
P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Contains : Kerosine (petroleum), hydrodesulfurized, Kerosine (petroleum)

WGK : 1

16. OTHER INFORMATION

Text of R phrases mentioned in Section 3 : R10 -Flammable.
R11 -Highly flammable.
R20 -Harmful by inhalation.
R22 -Harmful if swallowed.
R38 -Irritating to skin.
R40 -Limited evidence of a carcinogenic effect.
R50/53 -Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53 -Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R65 -Harmful: may cause lung damage if swallowed.

H-statements components : H226 -Flammable liquid and vapour.
H302 -Harmful if swallowed.
H304 -May be fatal if swallowed and enters airways.
H315 -Causes skin irritation.
H336 -May cause drowsiness or dizziness.
H351 -Suspected of causing cancer
H410 -Very toxic to aquatic life with long lasting effects.
H411 -Toxic to aquatic life with long lasting effects.

Sources of key data used to compile the datasheet : <http://ecb.jrc.it>
Classification and labelling of petroleum substances according to the EU dangerous substances directive (CONCAWE recommendations - June 2010)

The contents and format of this SDS are in accordance with EEC Commission Directive 1999/45/EC, 67/548/EC, 1272/2008/EC and EEC Commission Regulation 1907/2006/EC (REACH) Annex II.

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