HALLIBURTON

SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

OSA with DIESEL

Revision Date: 13-May-2014 **Revision Number:** 4

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

1.1 Product Identifier

Product Name OSA with DIESEL

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

Recommended Use Solvent

1.3 Details of the supplier of the safety data sheet

Halliburton Energy Services
Halliburton House, Howemoss Place
Kirkhill Industrial Estate
Dyce
Aberdeen, AB21 0GN
United Kingdom

Emergency Phone Number: +44 1224 795277 or +1 281 575 5000

www.halliburton.com

For further information, please contact

E-Mail address: fdunexchem@halliburton.com

1.4 Emergency telephone number

+44 1224 795277 or +1 281 575 5000

Emergency telephone - §45 - (EC)1272/2008	
Europe	**112**
Denmark	Poison Control Hotline (DK): +45 82 12 12 12
France	ORFILA (FR): + 01 45 42 59 59
Germany	Poison Center Berlin (DE): +49 030 30686 790
Italy	Poison Center, Milan (IT): +39 02 6610 1029
Netherlands	National Poisons Information Center (NL): +31 30 274 88 88 (NB: this service is only available to health professionals)
Norway	Poisons Information (NO):+ 47 22 591300
Poland	Poison Control and Information Centre, Warsaw (PL): +48 22 619 66 54; +48 22 619 08 97
Spain	Poison Information Service (ES): +34 91 562 04 20
United Kingdom	NHS Direct (UK): +44 0845 46 47

2. Hazards Identification

2.1 Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Skin Corrosion / irritation	Category 1 - H314
Serious Eye Damage / Eye Irritation	Category 1 - H318
Carcinogenicity	Category 2 - H351

Classification according to EU Directives 67/548/EEC or 1999/45/EC

For the full text of the R-phrases mentioned in this Section, see Section 16

Classification Xn - Harmful.

Risk Phrases R34 Causes burns.
R40 Limited evidence of a carcinogenic effect.

2.2 Label Elements

Hazard Pictograms

Signal Word **Danger**

Hazard Statements
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
H351 - Suspected of causing cancer

Precautionary Statements - EU (§28, 1272/2008)
P201 - Obtain special instructions before use
P280 - Wear protective gloves/eye protection/face protection
P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
P310 - Immediately call a POISON CENTER or doctor/physician
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Contains

Substances	**CAS Number**
Diesel	68476-34-6
Ethylene glycol monobutyl ether	111-76-2
Heavy aromatic petroleum naphtha	64742-94-5
Acetic anhydride	108-24-7
Acetic acid	64-19-7
Naphthalene	91-20-3

2.3 Other Hazards

None known

3. Composition/information on Ingredients

Substances	EINECS	CAS Number	PERCENT (w/w)	EEC Classification	EU - CLP Substance Classification	REACH No.
Diesel	270-676-1	68476-34-6	60 - 100%	Carc.Cat.3; R40	Carc. 2 (H351)	No data available
Ethylene glycol monobutyl ether	203-905-0	111-76-2	5 - 10%	Xn; R20/21/22 Xi; R36/38	Acute Tox. 4 (H302) Acute Tox. 4 (H312) Acute Tox. 4 (H332) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319)	01-2119475108-36
Heavy aromatic petroleum naphtha	265-198-5	64742-94-5	5 - 10%	Xn; R65	Asp. Tox. 1 (H304)	No data available
Acetic anhydride	203-564-8	108-24-7	1 - 5%	R10 Xn; R20/22 C; R34	Acute Tox. 4 (H302) Acute Tox. 4 (H332) Skin Corr. 1B (H314) Flam. Liq. 3 (H226)	01-2119486470-36
Acetic acid	200-580-7	64-19-7	1 - 5%	R10 C; R35	Skin Corr. 1A (H314) Flam. Liq. 3 (H226)	No data available

Naphthalene	202-049-5	91-20-3	0.1 - 1%	Carc.Cat.3; R40 Xn; R22 N; R50-53	Acute Tox. 4 (H302) Carc. 2 (H351) Flam. Sol. 2 (H228) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	No data available

For the full text of the R-phrases mentioned in this Section, see Section 16

4. First aid measures

4.1 Description of first aid measures

Inhalation If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

Eyes In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

Skin In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse.

Ingestion Get medical attention! If vomiting occurs, keep head lower than hips to prevent aspiration.

4.2 Most Important symptoms and effects, both acute and delayed

May cause eye and skin burns. May be harmful if swallowed. Potential carcinogen.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically

5. Firefighting Measures

5.1 Extinguishing media

Suitable Extinguishing Media

Carbon dioxide, dry chemical, foam.

Extinguishing media which must not be used for safety reasons

Avoid spraying water directly into storage containers due to danger of boilover.

5.2 Special hazards arising from the substance or mixture

Special Exposure Hazards

Use water spray to cool fire exposed surfaces. Closed containers may explode in fire. Avoid spraying water directly into storage containers due to danger of boilover. Decomposition in fire may produce toxic gases. Vapors are heavier than air and may accumulate in low areas. Vapors may travel along the ground to be ignited at distant locations.

5.3 Advice for firefighters

Special Protective Equipment for Fire-Fighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment. Wear self-contained breathing apparatus in enclosed areas.
See Section 8 for additional information

6.2 Environmental precautions

Prevent from entering sewers, waterways, or low areas.

6.3 Methods and material for containment and cleaning up

Isolate spill and stop leak where safe. Remove ignition sources and work with non-sparking tools. Contain spill with sand or other inert materials. Scoop up and remove.

6.4 Reference to other sections

See Section 8 and 13 for additional information.

7. Handling and Storage

7.1 Precautions for Safe Handling

Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse. Material is slippery underfoot. Open container slowly to release pressure.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice

7.2 Conditions for safe storage, including any incompatibilities

Store away from oxidizers. Store in a cool well ventilated area. Keep container closed when not in use. Keep from heat, sparks, and open flames.

7.3 Specific End Use(s)

Exposure Scenario No information available

Other Guidelines No information available

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure Limits

Substances	CAS Number	EU	UK OEL	Netherlands	France OEL
Diesel	68476-34-6	Not applicable	Not applicable	Not applicable	Not applicable
Ethylene glycol monobutyl ether	111-76-2	Not applicable	STEL: 50 ppm STEL: 246 mg/m³ TWA: 25 ppm TWA: 123 mg/m³	TWA: 100 mg/m³ STEL: 246 mg/m³	2 ppm
Heavy aromatic petroleum naphtha	64742-94-5	Not applicable	Not applicable	Not applicable	Not applicable
Acetic anhydride	108-24-7	Not applicable	STEL: 2 ppm STEL: 10 mg/m³ TWA: 0.5 ppm TWA: 2.5 mg/m³	2,5 mg/m³	Not applicable
Acetic acid	64-19-7	10 ppm	Not applicable	Not applicable	10 ppm
Naphthalene	91-20-3	Not applicable	10 ppm	TWA: 50 mg/m³ STEL: 80 mg/m³	10 ppm

Substances	CAS Number	Germany MAK/TRK	Spain	Portugal	Finland
Diesel	68476-34-6	Not applicable	Not applicable	TWA: 100 mg/m³	Not applicable
Ethylene glycol monobutyl ether	111-76-2	TWA: 20 ppm TWA: 98 mg/m³ MAK: 10 ppm MAK: 49 mg/m³	50 ppm VLA-EC; 245 mg/m³ VLA-EC VLA-ED: 20 ppm VLA-ED: 98 mg/m³	TWA: 20 ppm	STEL: 50 ppm STEL: 250 mg/m³ TWA: 20 ppm TWA: 98 mg/m³
Heavy aromatic petroleum naphtha	64742-94-5	Not applicable	Not applicable	Not applicable	Not applicable
Acetic anhydride	108-24-7	TWA: 5 ppm TWA: 21 mg/m³ MAK: 5 ppm MAK: 21 mg/m³	VLA-ED: 5 ppm VLA-ED: 21 mg/m³	TWA: 5 ppm	STEL: 5 ppm STEL: 21 mg/m³
Acetic acid	64-19-7	TWA: 10 ppm TWA: 25 mg/m³ MAK: 10 ppm MAK: 25 mg/m³	15 ppm VLA-EC; 37 mg/m³ VLA-EC VLA-ED: 10 ppm VLA-ED: 25 mg/m³	STEL: 15 ppm TWA: 10 ppm	STEL: 10 ppm STEL: 25 mg/m³ TWA: 5 ppm TWA: 13 mg/m³
Naphthalene	91-20-3	10 ppm	15 ppm VLA-EC; 80 mg/m³ VLA-EC VLA-ED: 10 ppm VLA-ED: 53 mg/m³	STEL: 15 ppm TWA: 10 ppm	STEL: 2 ppm STEL: 10 mg/m³ TWA: 1 ppm TWA: 5 mg/m³

Substances	CAS Number	Austria	Ireland	Switzerland	Norway
Diesel	68476-34-6	Not applicable	Not applicable	Not applicable	Not applicable
Ethylene glycol monobutyl ether	111-76-2	Not applicable	Not applicable	Not applicable	STEL: 20 ppm STEL: 75 mg/m³ TWA: 10 ppm TWA: 50 mg/m³
Heavy aromatic petroleum naphtha	64742-94-5	Not applicable	Not applicable	Not applicable	Not applicable
Acetic anhydride	108-24-7	Not applicable	Not applicable	Not applicable	Not applicable
Acetic acid	64-19-7	Not applicable	Not applicable	Not applicable	STEL: 20 ppm STEL: 37.5 mg/m³ TWA: 10 ppm TWA: 25 mg/m³

Naphthalene	91-20-3	Not applicable	Not applicable	Not applicable	STEL: 20 ppm STEL: 75 mg/m³ TWA: 10 ppm TWA: 50 mg/m³

Substances	CAS Number	Italy	Poland	Hungary	Czech Republic
Diesel	68476-34-6	Not applicable	Not applicable	Not applicable	Not applicable
Ethylene glycol monobutyl ether	111-76-2	STEL: 50 ppm STEL: 246 mg/m³ TWA: 20 ppm TWA: 98 mg/m³	NDSCh: 200 mg/m³ NDS: 98 mg/m³	TWA: 98 mg/m³ STEL: 246 mg/m³	TWA: 100 mg/m³
Heavy aromatic petroleum naphtha	64742-94-5	Not applicable	Not applicable	Not applicable	Not applicable
Acetic anhydride	108-24-7	Not applicable	NDS: 10 mg/m³	TWA: 20 mg/m³ STEL: 20 mg/m³	TWA: 4 mg/m³
Acetic acid	64-19-7	10 ppm	NDSCh: 30 mg/m³ NDS: 15 mg/m³	TWA: 25 mg/m³ STEL: 25 mg/m³	TWA: 25 mg/m³
Naphthalene	91-20-3	Not applicable	NDSCh: 50 mg/m³ NDS: 20 mg/m³	TWA: 50 mg/m³	TWA: 50 mg/m³

Substances	CAS Number	Denmark
Diesel	68476-34-6	Not applicable
Ethylene glycol monobutyl ether	111-76-2	TWA: 20 ppm TWA: 98 mg/m³
Heavy aromatic petroleum naphtha	64742-94-5	Not applicable
Acetic anhydride	108-24-7	Not applicable
Acetic acid	64-19-7	TWA: 10 ppm TWA: 25 mg/m³
Naphthalene	91-20-3	TWA: 10 ppm TWA: 50 mg/m³

Derived No Effect Level (DNEL) No information available.

Worker

Substances	Long-term exposure - systemic effects, Inhalation	Acute / short term exposure - systemic effects, Inhalation	Long-term exposure - local effects, Inhalation	Acute / short term exposure - local effects, Inhalation	Long-term exposure - systemic effects, Dermal	Acute / short term exposure - systemic effects, Dermal	Long-term exposure - local effects, Dermal	Acute / short term exposure - local effects, Dermal	Hazards for the eyes - local effects
Ethylene glycol monobutyl ether	98 mg/m³	663 mg/m³	Not available	246 mg/m³	75 mg/kg bw/day	89 mg/kg bw/day	Not available	Not available	Not available
Acetic anhydride	4.2 mg/m³	Not available	4.2 mg/m³	12.6 mg/m³	Not available	Not available	Not available	Not available	Not available
Acetic acid	Not available	Not available	25 mg/m³	25 mg/m³	Not available	Not available	Not available	Not available	Not available

General Population

Substances	Long-term exposure - systemic effects, Inhalation	Acute / short term exposure - systemic effects, Inhalation	Long-term exposure - local effects, Inhalation	Acute / short term exposure - local effects, Inhalation	Long-term exposure - systemic effects, Dermal	Acute / short term exposure - systemic effects, Dermal	Long-term exposure - local effects, Dermal	Acute / short term exposure - local effects, Dermal	Long-term exposure - systemic effects, Oral	Acute / short term exposure - local effects, Oral	Hazards for the eyes - local effects
Ethylene glycol monobutyl ether	49 mg/m³	426 mg/m³	Not available	123 mg/m³	38 mg/kg bw/day	44.5 mg/kg bw/day	Not available	Not available	3.2 mg/kg bw/day	13.4 mg/kg bw/day	Not available
Acetic acid	Not available	Not available	25 mg/m³	25 mg/m³	Not available	Not available	Not available	Not available	Not available	Not available	Not available

Predicted No Effect Concentration (PNEC) No information available.

Substances	Freshwater	Marine water	Intermittent release	Sewage treatment plant	Sediment (freshwater)	Sediment (marine water)	Air	Soil	Secondary poisoning
Ethylene glycol monobutyl ether	8.8 mg/L	0.88 kg/L	9.1 mg/L	463 mg/L	34.6 mg/kg	3.46 mg/kg	Not available	3.13 mg/kg soil dw	0.02 g/kg food
Acetic anhydride	3.06 mg/L	0.306 mg/L	30.58 mg/L	115 mg/L	11.4 mg/kg (wet)	1.14 mg/kg (wet)	Not available	0.478 mg/kg (wet)	Not available
Acetic acid	3.06 mg/l	0.306 mg/l	30.58 mg/l	85 mg/l	11.4 mg/kg	1.14 mg/kg	Not available	0.478 mg/kg	Not available

8.2 Exposure controls

Engineering Controls Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

Personal protective equipment

Respiratory Protection	If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional.
Hand Protection	Impervious rubber gloves.
Skin Protection	Rubber apron.
Eye Protection	Chemical goggles; also wear a face shield if splashing hazard exists.
Other Precautions	Eyewash fountains and safety showers must be easily accessible.

Environmental Exposure Controls No information available

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical State: Liquid **Color:** Clear
Odor: Sweet aromatic **Odor Threshold:** No information available

Property	Values	Remarks/ - Method
pH:	No data available	
Freezing Point/Range	No data available	
Melting Point/Range	No data available	
Boiling Point/Range	No data available	
Flash Point	> 65 °C Tag closed cup	
Evaporation rate	No data available	
Vapor Pressure	No data available	
Vapor Density	No data available	
Specific Gravity	No data available	
Water Solubility	Insoluble in water	
Solubility in other solvents	No data available	
Partition coefficient: n-octanol/water	No data available	
Autoignition Temperature	No data available	
Decomposition Temperature	No data available	
Viscosity	No data available	
Explosive Properties	No information available	
Oxidizing Properties	No information available	

9.2 Other information

VOC Content (%) No data available

10. Stability and Reactivity

10.1 Reactivity
Not applicable
10.2 Chemical Stability
Stable
10.3 Possibility of Hazardous Reactions
Will Not Occur
10.4 Conditions to Avoid
Keep away from heat, sparks and flame.
10.5 Incompatible Materials
Strong oxidizers. Strong alkalis.
10.6 Hazardous Decomposition Products
Carbon monoxide and carbon dioxide.

11. Toxicological Information

11.1 Information on Toxicological Effects

Acute Toxicity

Inhalation	May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness. May cause respiratory irritation.

Eye Contact Causes severe eye irritation May cause eye burns.

Skin Contact Causes severe skin irritation. May cause skin burns.

Ingestion Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal. May cause central nervous system depression including headache, dizziness, drowsiness, muscular weakness, incoordination, slowed reaction time, fatigue blurred vision, slurred speech, giddiness, tremors and convulsions.

Chronic Effects/Carcinogenicity Prolonged or repeated exposure may cause kidney, lung and blood effects. Contains petroleum distillates which have been shown to cause skin cancer in laboratory animals. The International Agency for Research on Cancer (IARC) has evaluated naphthalene and determined it to be a possible carcinogen to humans (Group 2B, based on sufficient evidence in experimental animals and inadequate evidence in humans).

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Diesel	68476-34-6	No data available	No data available	No data available
Ethylene glycol monobutyl ether	111-76-2	470 mg/kg (Rat) 1414 mg/kg (Guinea pig) 1746 mg/kg (Rat) 320 mg/kg (Rabbit) 530 mg/kg (Rat) 560 mg/kg (Rat) 3000 mg/kg (Rat) 2400 (Rat)	220 mg/kg (Rabbit) 2270 mg/kg (Rat) 200 mg/kg (Guinea pig) >2000 mg/kg (Rabbit) 841 mg/kg (Rabbit) 435 mg/kg (Rabbit) >2000 mg/kg (Guinea pig) >2000 mg/kg (Rat) 100 mg/kg (Rabbit) 207 mg/kg (Guinea pig) 400-500 mg/kg (Rabbit)	450 ppm (Rat) 4h 2.174 mg/L (Rat) 4h 2.21 mg/L (Rat) 4h 450-486 ppm (Rat) 4h 925 ppm (Rat) 4h >633 ppm (Guinea pig) 1h
Heavy aromatic petroleum naphtha	64742-94-5	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	590 mg/m³ (Rat) 4 h
Acetic anhydride	108-24-7	630 mg/kg (Rat)	4000 mg/kg (Rabbit)	4.2 mg/L (Rat) 4 h 1000 ppm (Rat) 4 h LC100: 1670 mg/m³ (Rat) 6h
Acetic acid	64-19-7	3310 mg/kg (Rat) 600 mg/kg (Rabbit) 4960 mg/kg (Mouse)	1060 mg/kg (Rabbit)	11.4 mg/L (Rat) 4 h
Naphthalene	91-20-3	490 mg/kg (Rat)	2500 mg/kg (Rat) 20 g/kg (Rabbit) 1120 mg/kg (Rabbit)	340 mg/m³ (Rat) 1 h

Substances	CAS Number	Skin corrosion/irritation
Diesel	68476-34-6	Non-irritating to the skin (rabbit)
Ethylene glycol monobutyl ether	111-76-2	Causes moderate skin irritation. (rabbit)
Heavy aromatic petroleum naphtha	64742-94-5	Non-irritating to the skin (rabbit)
Acetic anhydride	108-24-7	Corrosive to skin
Acetic acid	64-19-7	Corrosive to skin
Naphthalene	91-20-3	Non-irritating to the skin (rabbit)

Substances	CAS Number	Eye damage/irritation
Diesel	68476-34-6	Non-irritating to the eye (rabbit)
Ethylene glycol monobutyl ether	111-76-2	Causes moderate eye irritation. (rabbit)
Heavy aromatic petroleum naphtha	64742-94-5	Non-irritating to the eye (rabbit)
Acetic anhydride	108-24-7	Corrosive to eyes
Acetic acid	64-19-7	Corrosive to eyes
Naphthalene	91-20-3	Non-irritating to the eye (rabbit)

Substances	CAS Number	Skin Sensitization
Diesel	68476-34-6	Did not cause sensitization on laboratory animals (guinea pig)

Ethylene glycol monobutyl ether	111-76-2	Did not cause sensitization on laboratory animals (guinea pig)
Heavy aromatic petroleum naphtha	64742-94-5	Did not cause sensitization on laboratory animals (guinea pig)
Acetic anhydride	108-24-7	No information available
Acetic acid	64-19-7	No information available
Naphthalene	91-20-3	Did not cause sensitization on laboratory animals (guinea pig)

Substances	**CAS Number**	**Respiratory Sensitization**
Diesel	68476-34-6	No information available
Ethylene glycol monobutyl ether	111-76-2	No information available
Heavy aromatic petroleum naphtha	64742-94-5	No information available
Acetic anhydride	108-24-7	No information available
Acetic acid	64-19-7	No information available
Naphthalene	91-20-3	No information available

Substances	**CAS Number**	**Mutagenic Effects**
Diesel	68476-34-6	Some in vitro tests have shown mutagenic effects. In vivo tests did not show mutagenic effects.
Ethylene glycol monobutyl ether	111-76-2	In vivo tests did not show mutagenic effects. In vitro tests did not show mutagenic effects
Heavy aromatic petroleum naphtha	64742-94-5	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects.
Acetic anhydride	108-24-7	Not regarded as mutagenic.
Acetic acid	64-19-7	In vivo tests did not show mutagenic effects. In vitro tests did not show mutagenic effects
Naphthalene	91-20-3	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects.

Substances	**CAS Number**	**Carcinogenic Effects**
Diesel	68476-34-6	There is no evidence of carcinogenicity for the middle distillates present in this product.
Ethylene glycol monobutyl ether	111-76-2	Not regarded as carcinogenic.
Heavy aromatic petroleum naphtha	64742-94-5	Did not show carcinogenic effects in animal experiments
Acetic anhydride	108-24-7	No information available.
Acetic acid	64-19-7	Did not show carcinogenic effects in animal experiments
Naphthalene	91-20-3	The International Agency for Research on Cancer (IARC) has evaluated naphthalene and determined it to be a possible carcinogen to humans (Group 2B, based on sufficient evidence in experimental animals and inadequate evidence in humans).

Substances	**CAS Number**	**Reproductive toxicity**
Diesel	68476-34-6	Animal testing did not show any effects on fertility. (fetotoxic and teratogenic effects).
Ethylene glycol monobutyl ether	111-76-2	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.
Heavy aromatic petroleum naphtha	64742-94-5	No significant toxicity observed in animal studies at concentration requiring classification.
Acetic anhydride	108-24-7	No significant toxicity observed in animal studies at concentration requiring classification.
Acetic acid	64-19-7	Did not show teratogenic effects in animal experiments.
Naphthalene	91-20-3	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	**CAS Number**	**STOT - single exposure**
Diesel	68476-34-6	No significant toxicity observed in animal studies at concentration requiring classification.
Ethylene glycol monobutyl ether	111-76-2	No data of sufficient quality are available.
Heavy aromatic petroleum naphtha	64742-94-5	No significant toxicity observed in animal studies at concentration requiring classification.
Acetic anhydride	108-24-7	No significant toxicity observed in animal studies at concentration requiring classification.
Acetic acid	64-19-7	No significant toxicity observed in animal studies at concentration requiring classification.
Naphthalene	91-20-3	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	**CAS Number**	**STOT - repeated exposure**
Diesel	68476-34-6	No significant toxicity observed in animal studies at concentration requiring classification.

Ethylene glycol monobutyl ether	111-76-2	None under normal use conditions
Heavy aromatic petroleum naphtha	64742-94-5	No significant toxicity observed in animal studies at concentration requiring classification.
Acetic anhydride	108-24-7	No significant toxicity observed in animal studies at concentration requiring classification.
Acetic acid	64-19-7	No significant toxicity observed in animal studies at concentration requiring classification. Not applicable due to corrosivity of the substance.
Naphthalene	91-20-3	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	**CAS Number**	**Aspiration hazard**
Diesel	68476-34-6	Aspiration can be a hazard if this material is swallowed.
Ethylene glycol monobutyl ether	111-76-2	No adverse health effects are expected from swallowing.
Heavy aromatic petroleum naphtha	64742-94-5	May be fatal if swallowed and enters airways
Acetic anhydride	108-24-7	Not applicable
Acetic acid	64-19-7	Not applicable
Naphthalene	91-20-3	Not applicable

12. Ecological Information

12.1 Toxicity

Ecotoxicity Effects

Substances	**CAS Number**	**Toxicity to Algae**	**Toxicity to Fish**	**Toxicity to Microorganisms**	**Toxicity to Invertebrates**
Diesel	68476-34-6	No information available	LC50: 35 mg/l (Pimephales promelas)	No information available	No information available
Ethylene glycol monobutyl ether	111-76-2	EC50: 839.56 mg/l (Skeletonema costatum) EC50(72h): 911 mg/L (biomass) EC50: > 500 mg/l (Scenedesmus subspicatus) NOEC(72h): 88 mg/L (biomass)(Pseudokirchnerella subcapitata)	LC50: > 1000 mg/l (Scophthalmus maximus juvenile) LC50(96h): 1474 mg/L (Oncorhynchus mykiss) NOEC(21d): > 100mg/L (Danio rerio)	TT/EC3(48h): 463 mg/L (Uronema parduzci) TT/EC3(72h): 73 mg/L (Entosiphon sulcatum) TT/EC3(16h): 700 mg/L (Pseudomonas putida)	EC50: >1000 mg/L (Daphnia magna) EC50 (48h): 1800 mg/L (Daphnia magna) EC50: 1875 mg/l (Daphnia magna) NOEC(21d)(reproduction): 100 mg/L (Daphnia magna)
Heavy aromatic petroleum naphtha	64742-94-5	EC50: < 1 mg/l (Skeletonema costatum)	LC50: 2.34 mg/L (Oncorhynchus mykiss) LC50: 41 mg/L (Pimephales promelas) LC50: 0.84 mg/L (Oncorhynchus mykiss)	No information available	EC50(48h): 0.95 mg/L (Daphnia magna) EC50(48H): 0.55 mg/L (Daphnia magna)
Acetic anhydride	108-24-7	EC50(72h): > 1000 mg/L (>300.82 mg/L acetate ion) (growth rate) (Skeletonema costatum) (similar substance)	LC50: 265 mg/L (Leuciscus idus) LC50(96h): > 1000 mg/L (>300.82 mg/L acetate ion) (Oncorhynchus mykiss) (similar substance)	NOEC(16h): 1150 mg/L (Pseudomonas putida) (similar substance)	EC50(48h): 55 mg/L (Daphnia magna) EC50(48h): > 1000 mg/L (>300.82 mg/L acetate ion) (Daphnia magna) (similar substance) NOEC(21d): 31.4 - 37.9 mg/L (Daphnia magna) (reproduction) (similar substance – acetic acid)
Acetic acid	64-19-7	EC50: 90 mg/L (Microcystis aeruginosa) EC50(72h): > 1000 mg/L (>300.82 mg/L – acetate ion) (Skeletonema costatum)	LC50: 79 mg/l (Pimephales promelas) LC50: 75 mg/l (Pimephales promelas) LC50(96h) > 1000 mg/L (>300.82 mg/L – acetate ion) (Oncorhynchus mykiss)	NOEC(16h): 1150 mg/L (Pseudomonas putida)	EC50: 47 mg/l (Daphnia magna) LC50: 32 mg/L (Artemia salina) EC50(48h) > 1000 mg/L (>300.82 mg/L – acetate ion) (Daphnia magna) NOEC(21d): 31.4 - 37.9 mg/L (Daphnia magna) (reproduction)

Naphthalene	91-20-3	EC50(72h): 0.4 mg/L (Skeletonema costatum)	LC50(96h) 6.08 mg/L (Pimephales promelas) LC50(96h): 1.2 mg/L (Oncorhynchus gorbuscha) LC50(96h): 1.6 mg/L (Oncorhynchus mykiss) NOEC(40d): 0.37 mg/L (Oncorhynchus kisutch) NOEC(30d): < 0.85 mg/L Pimephales promelas)	No information available	EC50(48h): 2.16 mg/L (Daphnia magna)

12.2 Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Diesel	68476-34-6	(57.5% @ 28d)
Ethylene glycol monobutyl ether	111-76-2	Readily biodegradable (75-88% @ 28d)
Heavy aromatic petroleum naphtha	64742-94-5	No information available
Acetic anhydride	108-24-7	Readily biodegradable (99% @ 28d)
Acetic acid	64-19-7	Readily biodegradable (>95%% @ 28d)
Naphthalene	91-20-3	Readily biodegradable (100% @ 7d)

12.3 Bioaccumulative potential

Does not bioaccumulate

Substances	CAS Number	Log Pow
Diesel	68476-34-6	No information available
Ethylene glycol monobutyl ether	111-76-2	0.81
Heavy aromatic petroleum naphtha	64742-94-5	2.9 - 6.1
Acetic anhydride	108-24-7	-0.58 BCF 3.16 (Calculated)
Acetic acid	64-19-7	-0.17 BCF 3.16 (Calculated)
Naphthalene	91-20-3	3.28

12.4 Mobility in soil

No information available

12.5 Results of PBT and vPvB assessment

No information available.

12.6 Other adverse effects

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

13. Disposal Considerations

13.1 Waste treatment methods

Disposal Method Disposal should be made in accordance with federal, state, and local regulations.

Contaminated Packaging Follow all applicable national or local regulations.

14. Transport Information

IMDG/IMO

UN Number: Not restricted.

UN Proper Shipping Name: Not restricted

Transport Hazard Class(es): Not applicable

Packing Group: Not applicable

Environmental Hazards: Not applicable

RID

UN Number: Not restricted.

UN Proper Shipping Name: Not restricted

Transport Hazard Class(es): Not applicable

Packing Group:	Not applicable
Environmental hazard:	Not applicable

ADR

UN Number:	Not restricted.
UN Proper Shipping Name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental hazard:	Not applicable

IATA/ICAO

UN Number:	Not restricted.
UN Proper Shipping Name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental hazard:	Not applicable

Special Precautions for User None

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable

15. Regulatory Information

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

International Inventories

EINECS Inventory	This product, and all its components, complies with EINECS
US TSCA Inventory	All components listed on inventory or are exempt.
Canadian DSL Inventory	All components listed on inventory or are exempt.

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

Germany, Water Endangering Classes (WGK) Not determined.

15.2 Chemical Safety Assessment

No information available

16. Other Information

Full text of R-phrases referred to under Sections 2 and 3

R10 Flammable.
R20/22 Harmful by inhalation and if swallowed.
R20/21/22 Harmful by inhalation, by contact with skin and if swallowed.
R22 Harmful if swallowed.
R36/38 Irritating to eyes and skin.
R34 Causes burns.
R35 Causes severe burns.
R40 Limited evidence of a carcinogenic effect.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R65 Harmful: may cause lung damage if swallowed.

Key literature references and sources for data

www.ChemADVISOR.com/

Revision Date: 13-May-2014

Revision Note

Not applicable

This safety data sheet complies with the requirements of Regulation (EC) No. 453/2010

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End of Safety Data Sheet