ASO (Acid Soluble Oil)

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

<table>
<thead>
<tr>
<th>Trade name</th>
<th>ASO (Acid Soluble Oil)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synonyms</td>
<td>Aromatic Hydrocarbon Mixture</td>
</tr>
<tr>
<td>Use</td>
<td>Fuel</td>
</tr>
<tr>
<td>Company</td>
<td>Sasol Chemicals (USA) LLC (an affiliate of Sasol Chemicals North America LLC)</td>
</tr>
<tr>
<td>Address</td>
<td>12120 Wickchester Lane   Houston TX 77079</td>
</tr>
<tr>
<td>Telephone</td>
<td>CHEMTREC North America Transportation Emergency (24-hr) (800) 424-9300</td>
</tr>
<tr>
<td></td>
<td>CHEMTREC World Wide                                         (703) 527-3887</td>
</tr>
<tr>
<td></td>
<td>Other Emergencies (24-hr)                                   (337) 494-5142</td>
</tr>
<tr>
<td></td>
<td>SDS and Product Information (8:00am-4:30pm CST)             (281) 588-3491</td>
</tr>
<tr>
<td></td>
<td>Health and Safety Information (7:30am-4:00pm CST)           (281) 588-3492</td>
</tr>
<tr>
<td>E-mail address</td>
<td><a href="mailto:SasolElectronicSDS@us.sasol.com">SasolElectronicSDS@us.sasol.com</a></td>
</tr>
</tbody>
</table>

SECTION 2  HAZARDS IDENTIFICATION

GHS Hazards

- Acute toxicity (Dermal) Category 1
- Acute toxicity (Inhalation) Category 1
- Acute toxicity (Oral) Category 1
- Skin corrosion Category 1
- Serious eye damage Category 1
- Carcinogenicity Category 1A
- Germ cell mutagenicity Category 1B
- Specific target organ toxicity - repeated exposure Category 1
- Aspiration toxicity Category 1
- Chronic aquatic toxicity Category 1

LABEL ELEMENTS

Hazard symbols

Signal word  Danger

Hazard statements  H300 + H310 + H330  Fatal if swallowed, in contact with skin or if inhaled
                 H304  May be fatal if swallowed and enters airways.
                 H314  Causes severe skin burns and eye damage.
ASO (Acid Soluble Oil)

H340  May cause genetic defects.
H350  May cause cancer.
H372  Causes damage to organs through prolonged or repeated exposure.
H410  Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention
P201  Obtain special instructions before use.
P202  Do not handle until all safety precautions have been read and understood.
P260  Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P262  Do not get in eyes, on skin, or on clothing.
P264  Wash skin thoroughly after handling.
P270  Do not eat, drink or smoke when using this product.
P271  Use only outdoors or in a well-ventilated area.
P280  Wear protective gloves/ protective clothing/ eye protection/ face protection.
P273  Avoid release to the environment.

Response
P301 + P330 + P331  IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353  IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P363  Wash contaminated clothing before reuse.
P304 + P340  IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P310  Immediately call a POISON CENTER/doctor.
P305 + P351 + P338  IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313  IF exposed or concerned: Get medical advice/ attention.
P391  Collect spillage.
P308  IF exposed or concerned:

Storage
P403 + P233  Store in a well-ventilated place. Keep container tightly closed.
P405  Store locked up.

Disposal
P501  Dispose of contents/ container to an approved waste disposal plant.

SECTION 3  COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthracene (alkylated)</td>
<td>120-12-7</td>
<td>&lt;40</td>
</tr>
<tr>
<td>Alkanes, C10-14</td>
<td>93924-07-3</td>
<td>&lt;18</td>
</tr>
<tr>
<td>Naphthalene (alkylated)</td>
<td>91-20-3</td>
<td>&lt;12</td>
</tr>
<tr>
<td>Indane (alkylated)</td>
<td>496-11-7</td>
<td>&lt;10</td>
</tr>
<tr>
<td>Fluorene (alkylated)</td>
<td>86-73-7</td>
<td>&lt;4</td>
</tr>
<tr>
<td>Acenaphthylene (alkylated)</td>
<td>208-96-8</td>
<td>&lt;3</td>
</tr>
<tr>
<td>Dialin (alkylated)</td>
<td>447-53-0</td>
<td>&lt;3</td>
</tr>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>&lt;1</td>
</tr>
</tbody>
</table>
ASO (Acid Soluble Oil)

Hydrofluoric acid  7664-39-3  <0.5
Unidentified aromatic hydrocarbons  Mixture  <15

See Section 8 for Exposure Guidelines and Section 15 for Regulatory Classifications.

SECTION 4  FIRST AID MEASURES

**Eye contact**  Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention immediately.

**Skin contact**  Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately. Apply calcium gluconate (2.5%) gel at burn site or area of contamination.

**Inhalation**  Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. In case of shortness of breath, give oxygen. Call a physician immediately.

**Ingestion**  Do NOT induce vomiting. If swallowed, call a poison control centre or doctor immediately. Never give anything by mouth to an unconscious person.

SECTION 5  FIREFIGHTING MEASURES

**FLAMMABLE PROPERTIES**

**Fire/explosion**  Do not allow run-off from fire fighting to enter drains or water courses. Hydrofluoric acid will attack most metals, releasing potentially explosive hydrogen gas. NFPA Class IIIB combustible liquid.

**Suitable extinguishing media**  Water spray or fog, foam, dry chemical, CO2, Do not use a solid water stream as it may scatter and spread fire.

**Protective equipment and precautions for firefighters**  Wear self-contained breathing apparatus and protective suit.

**Further information**  Evacuate personnel to safe areas. Stay upwind/ keep distance from source. In the event of fire, cool tanks with water spray. Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6  ACCIDENTAL RELEASE MEASURES

**Methods and materials for containment and cleaning up**  Evacuate the area and eliminate all sources of ignition. Wear a self-contained breathing apparatus and appropriate Personal Protective Equipment (PPE). Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Do not allow product to contaminate groundwater, lakes, streams, ponds, or soil. Neutralise with the following product(s): lime
SAFETY DATA SHEET

ASO (Acid Soluble Oil)

SECTION 7  HANDLING AND STORAGE

Safe handling advice  Ensure all equipment is electrically grounded before beginning transfer operations. Do not breathe gas/fumes/vapour/spray. Do not get in eyes, on skin, or on clothing.

Storage/Transport pressure  Ambient

Load/Unload temperature  Ambient

SECTION 8  EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING MEASURES
Air contaminant levels should be controlled below the PEL or TLV for this product (see Exposure Guidelines).

PERSONAL PROTECTIVE EQUIPMENT

Eyes  Wear as appropriate: Goggles, Face-shield

Skin  Wear suitable protective clothing, gloves and eye/face protection. Request information on glove permeation properties from the glove supplier.

Inhalation  Use NIOSH approved respiratory protection.

EXPOSURE GUIDELINES

Components  Exposure limit(s)

Naphthalene (alkylated)  
OSHA PEL 10 ppm 50 mg/m3
ACGIH TLV (8-hour) 10 ppm

Benzene  
OSHA TWA 1 ppm
OSHA STEL 5 ppm
ACGIH TLV (8-hour) 0.5 ppm
ACGIH STEL 2.5 ppm

Hydrofluoric acid  
ACGIH TLV (8-hour) 0.5 ppm
ACGIH Ceiling 2 ppm
OSHA TLV (8-hour) 3 ppm

PEL= Permissible Exposure Limits  TWA= Time Weighted Average (8 hr.)
TLV= Threshold Limit Value  STEL= Short Term Exposure Limit (15 min.)
EL= Excursion Limit  WEEL= Workplace Environmental Exposure Level

SECTION 9  PHYSICAL AND CHEMICAL PROPERTIES

Appearance  viscous; liquid;

Colour  brown
## ASO (Acid Soluble Oil)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<tbody>
<tr>
<td><strong>Form</strong></td>
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<tr>
<td><strong>Odour</strong></td>
<td>Hydrocarbons</td>
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<td><strong>Odour Threshold</strong></td>
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<tr>
<td><strong>Flash point</strong></td>
<td>107 °C, 225 °F; PM;</td>
</tr>
<tr>
<td><strong>Flammability</strong></td>
<td>Upper explosion limit: Not available</td>
</tr>
<tr>
<td></td>
<td>Lower explosion limit: Not available</td>
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<tr>
<td><strong>Boiling point/boiling range</strong></td>
<td>190 °C, 375 °F;</td>
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<tr>
<td><strong>Melting point/range</strong></td>
<td>no data available</td>
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<tr>
<td><strong>Auto-ignition temperature</strong></td>
<td>Not available</td>
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<tr>
<td><strong>Decomposition temperature</strong></td>
<td>no data available</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
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</tr>
<tr>
<td><strong>Vapour pressure</strong></td>
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</tr>
<tr>
<td><strong>Vapour density</strong></td>
<td>no data available</td>
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<tr>
<td><strong>Density</strong></td>
<td>0.9698 g/cm³ @ 20 °C, 68 °F;</td>
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<tr>
<td><strong>Specific gravity</strong></td>
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<tr>
<td><strong>Water solubility</strong></td>
<td>insoluble</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td>22.895 cSt @ 60 °C, 140 °F;</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>2.1 - 5.9</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>no data available</td>
</tr>
<tr>
<td><strong>Partition coefficient: n-octanol/water</strong></td>
<td>no data available</td>
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</tbody>
</table>

### SECTION 10  STABILITY AND REACTIVITY

**Reactivity**
Stable at normal ambient temperature and pressure.

**Chemical stability**
No decomposition if stored and applied as directed.
ASO (Acid Soluble Oil)

Conditions to avoid
Keep away from heat and sources of ignition.

Hazardous decomposition products
Carbon dioxide (CO2) Carbon monoxide HF decomposes by reaction with metals, liberates hydrogen gas.

Materials to avoid
Oxidizing agents
Fluorine
Metals
Alkalies

Hazardous polymerisation
None.

SECTION 11 TOXICOLOGICAL INFORMATION

Additional Remarks
Information given is based on data on the components and the toxicology of similar products.

Acute dermal toxicity
Test substance: Hydrofluoric acid, Benzene and other aromatic hydrocarbons; Toxic through skin absorption.

Acute inhalation toxicity
Aspiration of liquid material into lungs may cause lung damage.

Acute oral toxicity
Fatal if swallowed.

Skin corrosion/irritation
Test substance: Hydrofluoric Acid Corrosive

Eye damage/irritation
Test substance: Hydrofluoric Acid Corrosive

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
Genotoxicity in vitro: no data available

Genotoxicity in vivo: no data available

Assessment Mutagenicity:
May cause genetic defects.

Reproductive toxicity
Reproductive toxicity: no data available

Assessment Reproductive toxicity: no data available
Teratogenicity: no data available

Assessment teratogenicity: no data available

STOT - single exposure no data available

STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure.

Aspiration toxicity May be fatal if swallowed and enters airways.

Carcinogenicity Assessment carcinogenicity: May cause cancer.

Carcinogenicity ratings

Naphthalene (alkylated)
  NTP Reasonably anticipated to be a human carcinogen.
  IARC Possible human carcinogen

Benzene
  NTP Known to be a human carcinogen.
  OSHA Carcinogen
  IARC Carcinogenic to humans.

SECTION 12 ECOLOGICAL INFORMATION

Aquatic toxicity Very toxic to aquatic life with long lasting effects.

Toxicity to fish no data available

Toxicity to aquatic invertebrates no data available

Toxicity to algae no data available

Chronic toxicity to fish no data available

Chronic toxicity to aquatic invertebrates no data available

Biodegradation Not readily biodegradable.

Bioaccumulation no data available

Mobility in soil no data available

Other adverse effects no data available
SECTION 13 DISPOSAL CONSIDERATIONS

Waste Code

D018 (TC Benzene) RQ = 10 lbs. U134 (Hydrofluoric acid) RQ = 100 lbs. This product has the RCRA characteristic of corrosivity and toxicity. Re-evaluation of the product may be required by the user at the time of disposal, since the product uses, transformations, mixtures, contamination, and spillage may change the classification.

Disposal methods

Dispose of only in accordance with local, state, and federal regulations. Land disposal of this product is restricted. Do not contaminate any lakes, streams, ponds, groundwater or soil.

Empty containers.

Empty containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Empty drums should be completely drained, triple-rinsed, properly bunged and promptly returned to a drum reconditioner, or properly disposed.

SECTION 14 TRANSPORT INFORMATION

DOT

UN 2922, Corrosive liquids, toxic, n.o.s. (contains Hydrofluoric acid, Benzene, Naphthalene), 8 (6.1), II
When shipped in quantities greater than 833 lbs, RQ must be added to the shipping description.

IATA

UN 2922, Corrosive liquids, toxic, n.o.s. (contains Hydrofluoric acid, Benzene, Naphthalene), 8 (6.1), II
When shipped in quantities greater than 833 lbs, RQ must be added to the shipping description.

IMDG

UN 2922, Corrosive liquids, toxic, n.o.s., (contains Hydrofluoric acid, Benzene, Naphthalene), 8 (6.1), II
When shipped in quantities greater than 833 lbs, RQ must be added to the shipping description.

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

Remarks

no data available

SECTION 15 REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

OSHA Hazards (HCS 1994)

no data available

TSCA Inventory Listing Components

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
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</table>

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ASO (Acid Soluble Oil)

Not listed
This material is not listed on TSCA.

SARA 302 Status
Components | CAS-No. | Weight percent
--- | --- | ---
Hydrofluoric acid | 7664-39-3 | < 0.5 %

SARA 311/312 Classification
"Immediate (acute) health hazard", "Delayed (chronic) health hazard"

SARA 313 Chemical
Components | CAS-No. | Weight percent
--- | --- | ---
Anthracene | 120-12-7 | < 40 %
Naphthalene | 91-20-3 | < 12 %
Benzene | 71-43-2 | < 1 %
Hydrofluoric acid | 7664-39-3 | < 0.5 %

US. EPA CERCLA Hazardous Substances (40 CFR 302)
Components | Reportable Quantity | Weight percent
--- | --- | ---
Anthracene | 5,000 LB | < 40 %
Naphthalene | 100 LB | < 12 %
Fluorene | 5,000 LB | < 4 %
Acenaphthylene | 5,000 LB | < 3 %
Benzene | 10 LB | < 1 %
Hydrofluoric acid | 100 LB | < 0.5 %

INTERNATIONAL REGULATIONS

WHMIS Classification
Class D, Division 1, Subdivision A: Very toxic material
Class D, Division 2, Subdivision A: Very toxic material
Class D, Division 2, Subdivision B: Toxic material.
Class E. Corrosive material.

European Union
Classification according to Regulation (EU) 1272/2008.

Acute toxicity (Dermal), Category 1
Acute toxicity (Inhalation), Category 1
Acute toxicity (Oral), Category 1
Carcinogenicity, Category 1A
Germ cell mutagenicity, Category 1B
Serious eye damage, Category 1
Skin irritation, Category 1
Specific target organ toxicity - repeated exposure, Category 1
Aspiration hazard, Category 1
Chronic aquatic toxicity, Category 1

Australia. Inventory of Chemical Substances (AICS)  Not listed

Japan. Inventory of Existing and New Chemical Substances (ENCS)  Not listed
ASO (Acid Soluble Oil)

Japan. Industrial Safety & Health Law (ISHL) Inventory  
Not listed

Canada. Domestic Substances List (DSL) Inventory  
Not listed

Canadian Non-Domestic Substance Listing (NDSL)  
Not listed

European Inventory of Existing Commercial Chemical Substances (EINECS) Listing  
Not listed

Philippines. Inventory of Chemicals / Chemical Substances (PICCS)  
Not listed

Korea. Existing Chemicals Inventory (KECI)  
Not listed

China. Inventory of Existing Chemical Substances (IECSC)  
Not listed

Mexico. National Inventory of Chemical Substances (INSQ)  
Not listed

New Zealand. Inventory of Chemicals (NZIoC)  
Not listed

Switzerland. Inventory of Notified New Substances (CHINV)  
Not listed

Taiwan. National Existing Chemical Inventory (NECI)  
Not listed

Please note: The names and CAS numbers which are used for this product in the stated inventories may deviate from the information which is listed in Section 3.

STATE REGULATIONS

California Prop. 65  
Components:  
Naphthalene  
91-20-3  
Benzene  
71-43-2

SECTION 16 OTHER INFORMATION

HAZARD RATINGS

<table>
<thead>
<tr>
<th>HMIS®</th>
<th>Health</th>
<th>Flammability</th>
<th>Physical Hazard/ Instability</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>3</td>
<td>1</td>
<td>0</td>
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