1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name: SPLASH® Lipidomix® Mass Spec Standard
Product Number: 330707
Brand: AVANTI

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

Identified uses: Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company: Avanti Polar Lipids, INC
700 Industrial Park Drive
Alabaster, Al 35007
United States of America

Telephone: (205) 663-2494
Fax: (205) 663-0756

1.4 Emergency telephone number

Emergency Phone #: +1 703-741-5970 / 1800-424-9300(CHEMTREC)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 2), H225
Acute toxicity, Oral (Category 3), H301
Acute toxicity, Inhalation (Category 3), H331
Acute toxicity, Dermal (Category 3), H311
Specific target organ toxicity - single exposure (Category 1), Eyes, H370

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word: Danger

Hazard statement(s)
H225 Highly flammable liquid and vapour.
H301 + H311 + H331 Toxic if swallowed, in contact with skin or if inhaled.
H370 Causes damage to organs (Eyes).

Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
Use only non-sparking tools.

Take precautionary measures against static discharge.

Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

Wash skin thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

Wear protective gloves/ eye protection/ face protection.

IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor.

IF exposed: Call a POISON CENTER or doctor/ physician.

Take off contaminated clothing and wash before reuse.

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Store in a well-ventilated place. Keep container tightly closed.

Store in a well-ventilated place. Keep cool.

Store locked up.

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

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Synonyms : SPLASH® Lipidomix® Mass Spec Standard

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>Flam. Liq. 2; Acute Tox. 3; STOT SE 1; H225, H301 + H311 + H331, H370</td>
<td>90 - 100 %</td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11
4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media
Suitable extinguishing media
Dry powder Dry sand

Unsuitable extinguishing media
Do NOT use water jet.

5.2 Special hazards arising from the substance or mixture
No data available

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
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).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Recommended storage temperature -25 - -15 °C
Storage class (TRGS 510): 3: Flammable liquids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>TWA</td>
<td>200 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Remarks</th>
<th>Headache Nausea</th>
</tr>
</thead>
</table>
Dizziness  
Eye damage  
Substances for which there is a Biological Exposure Index or Indices (see BEI® section)  
Danger of cutaneous absorption

<table>
<thead>
<tr>
<th>STEL</th>
<th>250 ppm</th>
<th>USA. ACGIH Threshold Limit Values (TLV)</th>
</tr>
</thead>
</table>
| Headache  
Nausea  
Dizziness  
Eye damage  
Substances for which there is a Biological Exposure Index or Indices (see BEI® section)  
Danger of cutaneous absorption

| TWA | 200 ppm  
260 mg/m³ | USA. NIOSH Recommended Exposure Limits |
|-----|-----------|----------------------------------------|
| Potential for dermal absorption

| ST | 250 ppm  
325 mg/m³ | USA. NIOSH Recommended Exposure Limits |
|----|-----------|----------------------------------------|
| Potential for dermal absorption

| TWA | 200 ppm  
260 mg/m³ | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
|-----|-----------|----------------------------------------|
| The value in mg/m³ is approximate.

<table>
<thead>
<tr>
<th>C</th>
<th>1,000 ppm</th>
<th>California permissible exposure limits for chemical contaminants (Title 8, Article 107)</th>
</tr>
</thead>
</table>
| Skin

| PEL | 200 ppm  
260 mg/m³ | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
|-----|-----------|----------------------------------------------------------------------------------|
| Skin

| STEL | 250 ppm  
325 mg/m³ | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
|-----|-----------|----------------------------------------------------------------------------------|
| Skin

### Biological occupational exposure limits

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Parameters</th>
<th>Value</th>
<th>Biological specimen</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td></td>
<td>Methanol</td>
<td>15 mg/l</td>
<td>Urine</td>
<td>ACGIH - Biological Exposure Indices (BEI)</td>
</tr>
</tbody>
</table>

**Remarks**  
End of shift (As soon as possible after exposure ceases)

8.2 Exposure controls

**Appropriate engineering controls**  
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

**Personal protective equipment**

**Eye/face protection**  
Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection**  
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
Body Protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance
   Form: liquid
   Colour: colourless

b) Odour
   characteristic

c) Odour Threshold
   No data available

d) pH
   No data available

e) Melting point/freezing point
   Melting point: -98.0 °C (-144.4 °F)

f) Initial boiling point and boiling range
   64.0 - 65.0 °C (147.2 - 149.0 °F) at 1,013 hPa (760 mmHg)

g) Flash point
   9.7 °C (49.5 °F) - closed cup - DIN 51755 Part 1

h) Evaporation rate
   6.3 - Diethylether1.9 - n-butyl acetate

i) Flammability (solid, gas)
   No data available

j) Upper/lower flammability or explosive limits
   Upper explosion limit: 36.5 % (V)
   Lower explosion limit: 5.5 % (V)

k) Vapour pressure
   128 hPa (96 mmHg) at 20.0 °C (68.0 °F)

l) Vapour density
   1.11

m) Relative density
   No data available

n) Water solubility
   soluble

o) Partition coefficient: n-octanol/water
   log Pow: -0.77 at 25 °C (77 °F) - (Lit.), Bioaccumulation is not expected.

p) Auto-ignition temperature
   455.0 °C (851.0 °F) at 1,013 hPa (760 mmHg) - DIN 51794

q) Decomposition temperature
   Distillable in an undecomposed state at normal pressure.

r) Viscosity
   0.54 - 0.59 mm2/s at 20 °C (68 °F) -

s) Explosive properties
   No data available

t) Oxidizing properties
   No data available

9.2 Other safety information

Minimum ignition energy
   0.14 mJ

Conductivity
   < 1 µS/cm

Relative vapour density
   1.11
10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Vapours may form explosive mixture with air. Vapours may form explosive mixture with air.

10.4 Conditions to avoid
Heat, flames and sparks.
Heat, flames and sparks.

10.5 Incompatible materials
Acid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals, Reducing agents, Acids

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NOx), Oxides of phosphorus, Sodium oxides
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

LD50 Oral - Rat - male and female - > 1,187 - 2,769 mg/kg

LDLO Oral - Human - 143 mg/kg
Remarks: Lungs, Thorax, or Respiration: Dyspnea. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.
Inhalation: No data available

LC50 Inhalation - Rat - male and female - 4 h - 131.25 mg/l

Dermal: No data available

LD50 Dermal - Rabbit - 17,100 mg/kg

No data available

No data available

Skin corrosion/irritation
No data available

Skin - Rabbit
Result: No skin irritation
Remarks: (ECHA) Drying-out effect resulting in rough and chapped skin.

Serious eye damage/eye irritation
No data available

Eyes - Rabbit
Result: No eye irritation
Remarks: (ECHA) Irritation of mucous membranes

Respiratory or skin sensitisation
No data available

Maximisation Test - Guinea pig
Result: negative  
(OECD Test Guideline 406)

**Germ cell mutagenicity**

No data available

Based on available data the classification criteria are not met.

**Ames test**

S. typhimurium

Result: negative

In vitro mammalian cell gene mutation test

fibroblast

Result: negative

OECD Test Guideline 474

Mouse - male and female - Bone marrow

Result: negative

**Carcinogenicity**

Did not show carcinogenic effects in animal experiments.

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.

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.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.

**Reproductive toxicity**

No data available

No data available

Based on available data the classification criteria are not met.

**Specific target organ toxicity - single exposure**

No data available

Acute inhalation toxicity - Irritation symptoms in the respiratory tract.

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**Additional Information**

**Repeated dose toxicity**

Rat - male and female - Inhalation - 28 d - NOAEL : 6.66 mg/l - OECD Test Guideline 412 - Subacute toxicity

Rat - male and female - Inhalation - 365 d - NOAEL : 0.13 mg/l - LOAEL : 1.3 mg/l - OECD Test Guideline 453

RTECS: Not available

Methyl alcohol may be fatal or cause blindness if swallowed.

Effects due to ingestion may include: Headache, Dizziness, Drowsiness, metabolic acidosis, Coma, Seizures.

Symptoms may be delayed., Damage of the: Liver, Kidney

Headache, Dizziness, Drowsiness, Coma, narcosis, Blindness, Impairment of vision, irritant effects, Nausea, Vomiting, agitation, spasms, inebriation

Drying-out effect resulting in rough and chapped skin., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence
12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

Toxicity to fish
flow-through test LC50 - Lepomis macrochirus (Bluegill) - 15,400.0 mg/l - 96 h (US-EPA)

Toxicity to daphnia and other aquatic invertebrates
EC50 - Daphnia magna (Water flea) - > 10,000 mg/l - 48 h (ECHA)

Toxicity to algae
static test ErC50 - Pseudokirchneriella subcapitata (green algae) - ca. 22,000.0 mg/l - 96 h (OECD Test Guideline 201)

Toxicity to bacteria
EC5 - Pseudomonas fluorescens - 6,600 mg/l - 16 h (IUCLID)

Remarks:
semi-static test EC50 - Daphnia magna (Water flea) - 18,260 mg/l - 96 h (OECD Test Guideline 202)

12.2 Persistence and degradability
No data available

Biochemical Oxygen Demand (BOD) 600 - 1,120 mg/g (IUCLID)

Chemical Oxygen Demand (COD) 1,420 mg/g (IUCLID)

Theoretical oxygen demand 1,500 mg/g (Lit.)

Ratio BOD/ThBOD 76 % (IUCLID)

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
No data available

Additional ecological information
Avoid release to the environment.

Stability in water
at 19 °C83 - 91 % - 72 h (Lit.)
Remarks: Hydrolyses on contact with water. Hydrolyses readily.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.
14. TRANSPORT INFORMATION

DOT (US)
UN number: 1230 Class: 3 Packing group: II
Proper shipping name: Methanol, solution
Reportable Quantity (RQ):
Poison Inhalation Hazard: No

IMDG
UN number: 1230 Class: 3 (6.1) Packing group: II EMS-No: F-E, S-D
Proper shipping name: METHANOL, SOLUTION

IATA
UN number: 1230 Class: 3 (6.1) Packing group: II
Proper shipping name: Methanol, solution

15. REGULATORY INFORMATION

SARA 302 Components
This material does not contain any components with a section 302 EHS TPQ.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>2007-07-01</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazards
Fire Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>2007-07-01</td>
</tr>
</tbody>
</table>

Pennsylvania Right To Know Components

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>2007-07-01</td>
</tr>
</tbody>
</table>

California Prop. 65 Components
, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>2012-03-16</td>
</tr>
</tbody>
</table>

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox. Acute toxicity
Flam. Liq. Flammable liquids
H225 Highly flammable liquid and vapour.
H301 Toxic if swallowed.
H301 + H311 + Toxic if swallowed, in contact with skin or if inhaled.
H331
H311 Toxic in contact with skin.
H331 Toxic if inhaled.
H370 Causes damage to organs.
STOT SE Specific target organ toxicity - single exposure

Further information
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Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.2 Revision Date: 07/31/2018 Print Date: 11/15/2018