SAFETY DATA SHEET
generated according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Date of issue: 05/19/2014 Version 1.0

SECTION 1. Identification

Product identifier
- Product number: AX0120
- Product name: Acetone GR ACS
- CAS-No.: 67-64-1

Relevant identified uses of the substance or mixture and uses advised against
- Identified uses: Reagent for analysis

Details of the supplier of the safety data sheet
- Company: EMD Millipore Corporation | 290 Concord Road, Billerica, MA 01821, United States of America | General Inquiries: +1-978-715-4321 | Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)

Emergency telephone: 800-424-9300 CHEMTREC (USA)
+1-703-527-3887 CHEMTREC (International)
24 Hours/day; 7 Days/week

SECTION 2. Hazards identification

GHS Classification
- Flammable liquid, Category 2, H225
- Eye irritation, Category 2, H319
- Specific target organ systemic toxicity - single exposure, Category 3, H336

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

GHS-Labeling

Hazard pictograms

Signal Word
Danger

Hazard Statements
- H225 Highly flammable liquid and vapor.
- H319 Causes serious eye irritation.
- H336 May cause drowsiness or dizziness.
Precautionary Statements
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

OSHA Hazards
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS and may deviate from the GHS information.

Other hazards
None known.

SECTION 3. Composition/information on ingredients
Formula \( \text{CH}_3\text{COCH}_3 \quad \text{C}_3\text{H}_6\text{O} \) (Hill)
Molar mass 58.08 g/mol

Hazardous ingredients
Chemical Name (Concentration)
CAS-No.
acetone (>= 90 % - <= 100 %)
67-64-1
Exact percentages are being withheld as a trade secret.

SECTION 4. First aid measures
Description of first-aid measures
Inhalation
After inhalation: fresh air. Call in physician.

Skin contact
After skin contact: wash off with plenty of water. Remove contaminated clothing.

Eye contact
After eye contact: rinse out with plenty of water. Call in ophthalmologist.

Ingestion

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed
irritant effects, Drowsiness, Dizziness, narcosis, Nausea, Vomiting, Stomach/intestinal disorders, Headache, drowsiness, Salivation, Coma
Risk of corneal clouding.
Drying-out effect resulting in rough and chapped skin.

Indication of any immediate medical attention and special treatment needed
No information available.
SECTION 5. Fire-fighting measures

**Extinguishing media**

*Suitable extinguishing media*
- Carbon dioxide (CO2), Foam, Dry powder

*Unsuitable extinguishing media*
- For this substance/mixture no limitations of extinguishing agents are given.

**Special hazards arising from the substance or mixture**
- Combustible.
- Vapors are heavier than air and may spread along floors.
- Forms explosive mixtures with air at ambient temperatures.
- Pay attention to flashback.
- Development of hazardous combustion gases or vapors possible in the event of fire.

**Advice for firefighters**

*Special protective equipment for fire-fighters*
- Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

*Further information*
- Prevent fire extinguishing water from contaminating surface water or the ground water system.
- Remove container from danger zone and cool with water.

SECTION 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**
- Advice for non-emergency personnel: Avoid substance contact. Do not breathe vapors, aerosols.
- Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

- Advice for emergency responders: Protective equipment see section 8.

**Environmental precautions**
- Do not empty into drains. Risk of explosion.

**Methods and materials for containment and cleaning up**
- Cover drains. Collect, bind, and pump off spills.
- Observe possible material restrictions (see sections 7 and 10).
- Take up with liquid-absorbent material (e.g. Chemizorb® ). Dispose of properly. Clean up affected area.

SECTION 7. Handling and storage

**Precautions for safe handling**
- Observe label precautions.

*Advice on protection against fire and explosion*
- Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.
Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Protected from light.

Store at room temperature.

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Basis</th>
<th>Value</th>
<th>Threshold limits</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>acetone 67-64-1</td>
<td>ACGIH</td>
<td>Time Weighted Average (TWA):</td>
<td>500 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Short Term Exposure Limit (STEL):</td>
<td>750 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NIOSH/GUIDE</td>
<td>Recommended exposure limit (REL):</td>
<td>250 ppm</td>
<td>590 mg/m³</td>
</tr>
<tr>
<td></td>
<td>OSHA_TRANS</td>
<td>PEL:</td>
<td>1,000 ppm</td>
<td>2,400 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Z1A</td>
<td>Time Weighted Average (TWA):</td>
<td>750 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Short Term Exposure Limit (STEL):</td>
<td>1,000 ppm</td>
<td>1,800 mg/m³</td>
</tr>
</tbody>
</table>

Engineering measures
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures
Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures
Immediately change contaminated clothing. Apply skin-protective barrier cream. Wash hands and face after working with substance.

Eye/face protection
Safety glasses

Hand protection
Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Other protective equipment:
Flame retardant antistatic protective clothing

Respiratory protection
required when vapors/aerosols are generated.
Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
### SECTION 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>liquid</td>
</tr>
<tr>
<td>Color</td>
<td>colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>fruity</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>0.1 - 662.5 ppm</td>
</tr>
<tr>
<td>pH</td>
<td>5 - 6</td>
</tr>
<tr>
<td></td>
<td>at 395 g/l, 68 °F (20 °C)</td>
</tr>
<tr>
<td>Melting point</td>
<td>-95.4 °C</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>133.2 °F (56.2 °C)</td>
</tr>
<tr>
<td></td>
<td>at 1,013 hPa</td>
</tr>
<tr>
<td>Flash point</td>
<td>&lt; -4 °F (&lt; -20 °C)</td>
</tr>
<tr>
<td></td>
<td>Method: DIN 51755 Part 1</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No information available.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No information available.</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>2.6 %(V)</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>12.8 %(V)</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>233 hPa</td>
</tr>
<tr>
<td></td>
<td>at 68 °F (20 °C)</td>
</tr>
<tr>
<td>Relative vapor density</td>
<td>2.01</td>
</tr>
<tr>
<td>Density</td>
<td>0.79 g/cm³</td>
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<tr>
<td></td>
<td>at 68 °F (20 °C)</td>
</tr>
<tr>
<td>Relative density</td>
<td>No information available.</td>
</tr>
<tr>
<td>Water solubility</td>
<td>soluble</td>
</tr>
<tr>
<td></td>
<td>at 68 °F (20 °C)</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>log Pow: -0.24 (experimental)</td>
</tr>
<tr>
<td></td>
<td>Bioaccumulation is not expected. (Lit.)</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No information available.</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Distillable in an undecomposed state at normal pressure.</td>
</tr>
</tbody>
</table>
Viscosity, dynamic  
0.32 mPa.s  
at 68 °F (20 °C)

Explosive properties  
Not classified as explosive.

Oxidizing properties  
none

Ignition temperature  
869 °F (465 °C)  
DIN 51794

Conductivity  
0.01 µS/cm  
at 68 °F (20 °C)

SECTION 10. Stability and reactivity

Reactivity  
Vapors may form explosive mixture with air.

Chemical stability  
Sensitivity to light  
Sensitive to air.

Possibility of hazardous reactions  
Risk of ignition or formation of inflammable gases or vapors with:  
chromosulfuric acid, chromyl chloride, ethanolamine, Fluorine, Strong oxidizing agents, strong reducing agents, Nitric acid, chromium(VI) oxide  
Risk of explosion with:  
nonmetallic oxyhalides, halogen-halogen compounds, Chloroform, nitrating acid, nitrosyl compounds, hydrogen peroxide, halogen oxides, organic nitro compounds, peroxy compounds  
Exothermic reaction with:  
Bromine, Alkali metals, alkali hydroxides, Halogenated hydrocarbon, Sulfur dichloride, phosphorous oxichloride

Conditions to avoid  
Warming.

Incompatible materials  
rubber, various plastics

Hazardous decomposition products  
no information available

SECTION 11. Toxicological information

Information on toxicological effects  
Likely route of exposure  
Inhalation, Eye contact, Skin contact  
Target Organs  
Eyes
Skin
Respiratory system
Central nervous system

Acute oral toxicity
LD50 rat: 5,800 mg/kg (RTECS)

Symptoms: Stomach/intestinal disorders, Risk of aspiration upon vomiting., Pulmonary failure possible after aspiration of vomit.

Acute inhalation toxicity
LC50 rat: 76 mg/l; 4 h (Lit.)

Symptoms: mucosal irritations absorption

Acute dermal toxicity
LD50 rabbit: 20,000 mg/kg
(IUCLID)

Skin irritation
rabbit
Result: No irritation
(External MSDS)

Repeated exposure may cause skin dryness or cracking.
Possible damages: slight irritation

Eye irritation
rabbit
Result: Eye irritation
(External MSDS)

Causes serious eye irritation.
Risk of corneal clouding.

Sensitization
Sensitization test: guinea pig
Result: negative
(Lit.)

Genotoxicity in vivo
Mutagenicity (mammal cell test): micronucleus.
Result: negative
(National Toxicology Program)

Genotoxicity in vitro
Mutagenicity (mammal cell test): chromosome aberration.
Result: negative
(National Toxicology Program)

Ames test
Result: negative
(National Toxicology Program)

Carcinogenicity
Did not show carcinogenic effects in animal experiments. (IUCLID)
**Specific target organ systemic toxicity - single exposure**
May cause drowsiness or dizziness.

**Specific target organ systemic toxicity - repeated exposure**
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

**Aspiration hazard**
Regarding the available data the classification criteria are not fulfilled.

**Carcinogenicity**

**IARC**
No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA**
No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**NTP**
No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**ACGIH**
No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

**Further information**
After absorption:
Headache, Salivation, Nausea, Vomiting, Dizziness, narcosis, Coma
Handle in accordance with good industrial hygiene and safety practice.

**SECTION 12. Ecological information**

**Ecotoxicity**

*Toxicity to fish*
LC50 Oncorhynchus mykiss (rainbow trout): 5,540 mg/l; 96 h (Lit.)

*Toxicity to daphnia and other aquatic invertebrates*
EC50 Daphnia magna (Water flea): 6,100 mg/l; 48 h (Lit.)

EC5 E.sulcatum: 28 mg/l; 72 h (maximum permissible toxic concentration) (Lit.)

*Toxicity to algae*
IC5 M.aeruginosa: 530 mg/l; 8 d (maximum permissible toxic concentration) (IUCLID)

*Toxicity to bacteria*
EC50 activated sludge: 59 - 67.4 mg/l; 30 min (Lit.)

EC5 Pseudomonas putida: 1,700 mg/l; 16 h (maximum permissible toxic concentration) (IUCLID)

**Persistence and degradability**

*Biodegradability*
91 %; 28 d
(IUCLID)
Readily biodegradable.
Biochemical Oxygen Demand (BOD)
1,850 mg/g (5 d) (IUCLID)

Chemical Oxygen Demand (COD)
2,070 mg/g (IUCLID)

Theoretical oxygen demand (ThOD)
2,200 mg/g (Lit.)

Bioaccumulative potential
Partition coefficient: n-octanol/water
log Pow: -0.24 (experimental)
Bioaccumulation is not expected. (Lit.)

Mobility in soil
No information available.

Additional ecological information
Discharge into the environment must be avoided.

SECTION 13. Disposal considerations
The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14. Transport information
Land transport (DOT)
UN number UN 1090
Proper shipping name ACETONE
Class 3
Packing group II
Environmentally hazardous --

Air transport (IATA)
UN number UN 1090
Proper shipping name ACETONE
Class 3
Packing group II
Environmentally hazardous --
Special precautions for user no

Sea transport (IMDG)
SECTION 15. Regulatory information

United States of America

OSHA Hazards
Flammable Liquid
Eye irritant
Skin irritant
Respiratory irritant
Harmful if inhaled.
Harmful if swallowed.
Target organ effects

This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.

SARA 311/312 Hazards
Fire Hazard
Acute Health Hazard
Chronic Health Hazard

SARA 313
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 302
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Clean Water Act
This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

DEA List I
Not listed

DEA List II
Listed

Ingredients
acetone

US State Regulations
Massachusetts Right To Know
Ingredients
acetone

Pennsylvania Right To Know
Ingredients
acetone

New Jersey Right To Know
Ingredients
acetone

California Prop 65 Components
This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Notification status
TSCA: All components of the product are listed in the TSCA-inventory.
DSL: All components of this product are on the Canadian DSL.

SECTION 16. Other information

Training advice
Provide adequate information, instruction and training for operators.

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

H225 Highly flammable liquid and vapor.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.

Key or legend to abbreviations and acronyms used in the safety data sheet
Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Date of issue: 05/19/2014

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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