SAFETY DATA SHEET

Finished product

Date Prepared: 09/28/2018
SDS No: E-6-1
In accordance with:
OSHA 29 CFR 1910.1200 HCS
WHMIS 2015
NBR 14725-4:2014
NCh 2245:2015
IRAM 41400-2006
NOM-018-STPS-2015

ASACLEAN™ E

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: ASACLEAN™ E
GENERAL USE: Purging Compound for thermoplastic injection molding machines and extruders.
PRODUCT DESCRIPTION: Styrenic resin based Purge Compound
PRODUCT CODE: ASACLEAN™ E

SUPPLIER
Sun Plastech Inc.
Asahi Kasei Group
1055 Parsippany Blvd
Parsippany, NJ 07054

Customer Service and Product Safety: (973) 257-1999

Manufacturer
Asahi Kasei Corporation
Hibiya Mitsui Tower, 1-1-2 Yurakucho, Chiyoda-Ku, Tokyo 100-0006 Japan
Department in charge: ASACLEAN Business Dept.

24 HR. EMERGENCY TELEPHONE NUMBERS
CHEMTREC (International): (703) 527-3887
CHEMTREC (US/ Canada): (800) 424-9300

COMMENTS: Restrictions on Use - Use of this material in the following applications is strictly prohibited: Being implanted into the human body, invasive or non-invasive contact with the human body (including blood, bodily fluids, etc.) continuously for 30 days or more.

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture
According to: UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS) [GHS (Rev. 7) (2017)]
Health: Solid form (pellets) is unlikely to present a health hazard
Environmental: None
Physical: Combustible dusts [OSHA: HCS]

GHS Label elements
Pictogram: No Pictogram
Signal Word: Warning [OSHA: HCS]

Hazard statements: May form combustible dust concentrations in air [OSHA: HCS]
Other hazards
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None expected

3. COMPOSITION / INFORMATION ON INGREDIENTS

The composition of ASACLEAN™ E is considered confidential business information and are therefore withheld from disclosure in accordance with Paragraph (i) of 29 CFR §1910.1200 (OSHA), NBR 14725-4:2014, NCh 2245:2015 and IRAM 41400-2006 and Paragraph E.3(c) of Appendix E of NOM-018-STPS-2015.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Content %</th>
<th>CAS No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Styrenic resin</td>
<td>&gt;80%</td>
<td>Not-disclosed</td>
</tr>
<tr>
<td>Resin additives</td>
<td>&lt;10%</td>
<td>Not-disclosed</td>
</tr>
<tr>
<td>Other additives</td>
<td>&lt;10%</td>
<td>Not-disclosed</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

FIRST AID MEASURES

EYES: Immediately flush eyes with plenty of water, remove contact lenses at once unless the lenses are stuck to the eyes. Get medical attention if irritation persists.

SKIN: For hot product, immediately immerse in or flush the affected area with large amounts of cold water to dissipate heat. Cover with clean cotton sheeting or gauze and get prompt medical attention. No attempt should be made to remove material from skin or to remove contaminated clothing as the flesh can be easily torn.

INGESTION: Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel.

INHALATION: If affected by fumes from heated material, remove from source of exposure and move the affected person into fresh air. If breathing is difficult, get medical attention immediately.

MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

Refer to Section 11

INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

None Expected.

5. FIRE FIGHTING MEASURES

GENERAL HAZARD: If vapors / fumes are present, wear appropriate NIOSH approved respirator and
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6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: Vacuum or sweep up material and place in a designated, labeled waste container. Avoid runoff into storm sewers and ditches which lead to waterways. Dispose of via a licensed waste disposal contractor.

LARGE SPILL: Vacuum or sweep up material and place in designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

ENVIRONMENTAL PRECAUTIONS

WATER SPILL: Keep out of water ways and storm sewers.

LAND SPILL: Vacuum or carefully scoop up spilled material and place in an appropriate container for disposal.

AIR SPILL: None Expected.

GENERAL PROCEDURES: Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air.

SPECIAL PROTECTIVE EQUIPMENT: None Expected.

7. HANDLING AND STORAGE

HANDLING: When handling the pellets in the original container, it is recommended to wear gloves to prevent any irritation. Handle safely to prevent any spills. If handling molten material, avoid directly breathing any gases from the molten purge and wear appropriate gloves. Though there is less likelihood of pellets igniting under normal temperatures, avoid any fire/ignition sources in the vicinity of the product and perform adequate housekeeping to keep the surrounding clean. And cool down the purge pile with water. Ensure proper ventilation since resins processed at high temperatures will emit gases. Local ventilation preferably should be provided.
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Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

STORAGE: Keep material in cool dry place. Protect from direct sunlight, rain and violent temperature fluctuation.

STORAGE TEMPERATURE: Ambient conditions when not being used.

LOADING TEMPERATURE: Standard use temperature range is 160-300 °C (320-570 °F). Do not use this product over 300 °C (570 °F). Flash Point is 380 °C (715 °F). Turn off heaters or lower temperature to 150 °C (300 °F) or less if ASACLEAN E grade will reside in the barrel for one hour or longer.

STORAGE PRESSURE: Ambient

SHELF LIFE: Recommend to use within 1 year, please consult processing documentation.

SPECIAL SENSITIVITY: None Expected.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

CONTROL PARAMETERS: If dust is generated during handling, use adequate ventilation to keep exposure to airborne dust below the nuisance dust limits listed below.

EXPOSURE LIMITS: Allowable concentration as general dust

Note: Solid form (pellets) is unlikely to present a health hazard. The following exposure limits apply if material is in powder form or if conditions and/or work practices generate dust.

ACGIH TLV (US) TWA: 10mg/m³ for 8 hrs. - Inhalable
TWA: 3mg/m³ for 8 hrs. - Respirable fraction

ENGINEERING CONTROLS: Use standard good ventilation or other engineering controls to minimize inhalation of dusts/vapors

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Wear safety glasses for general use.

Skin: Chemical goggles for cleaning mold machines.

SKIN: Cold or room temp material: None required. However protective clothing is a good industrial practice.

Hot material: Wear heat resistant protective gloves, clothing and face shield that are able to withstand the temperature of the molten product.

RESPIRATORY: To minimize risk to overexposure to dust, vapor, fumes, it is recommended to use local exhaust for processing temperatures 160-300 °C (320-570 °F). Do not use this product over 300 °C (570 °F).
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NIOSH/OSHA or EN approved respiratory protection is recommended for use when airborne concentrations exceed exposure limits.

PROTECTIVE CLOTHING: Standard industry clothing is recommended.

WORK HYGIENIC PRACTICES: Wash hands after handling, before eating, smoking, using the lavatory, and at the end of the day.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

APPEARANCE

PHYSICAL STATE: Solid

SHAPE: Pellets

COLOR: Milky white - light yellow

ODOR: Faint to strong

ODOR THRESHOLD: Not Available

pH: NA = Not Applicable

MELTING POINT: Does not exhibit sharp melting point, but softens at about 130°C (266°F)

FREEZING POINT: NA = Not Applicable

BOILING POINT: No data available

FLASH POINT AND METHOD: 380°C (716°F)

EVAPORATION RATE: NA = Not Applicable

FLAMMABILITY: No data available

UPPER/LOWER FLAMMABILITY LIMITS: No data available

VAPOR PRESSURE: Not Available

VAPOR DENSITY: Not Available

FREEZING POINT: NA = Not Applicable

SPECIFIC GRAVITY: 1.06 at 23°C (73°F)

SOLUBILITY

WATER: Insoluble

OTHER SOLVENT: Soluble in methyl ethyl ketone, cyclohexanone, etc. (except for inorganic content)

PARTITION COEFFICIENT (log Kow): No data available

AUTOIGNITION TEMPERATURE: 490°C (914°F)

DECOMPOSITION TEMPERATURE: No data available

VIScosity: NA = Not Applicable

EXPLOSIVE PROPERTIES: No data available

OXIDIZING PROPERTIES: No data available

Other information:

PARTICLE SIZE: 3-5 mm
10. STABILITY AND REACTIVITY

REACTIVITY: Stable and non-reactive under normal handling and storage conditions.
CHEMICAL STABILITY: The product is stable
POSSIBILITY OF HAZARDOUS REACTIONS: None Expected.
CONDITIONS TO AVOID: Do not exceed recommended temperature range. In order to avoid autoignition / hazardous decomposition of hot thick masses of plastic, purging should be collected in small, flat shapes to allow rapid cooling in water. Do not allow ASACLEAN E grade to reside in barrel for more than 30 minutes at temperatures higher than 280 °C (535 °F).
INCOMPATIBLE MATERIALS: None Expected.
HAZARDOUS DECOMPOSITION PRODUCTS: Styrene, ethylbenzene, etc.

11. TOXICOLOGICAL INFORMATION

LIKELY ROUTES OF EXPOSURE: Skin contact
SIGNS AND SYMPTOMS OF OVEREXPOSURE:
EYES: Irritation or watering
SKIN: Contact causes skin irritation.
SKIN ABSORPTION: NA = Not Applicable
INGESTION: Upset stomach or nausea
INHALATION: Irritation of the throat, or coughing
ACUTE TOXICITY
Oral: Not Classified
Dermal: Not Classified
Inhalation gases: Not Classified
Inhalation Vapor: Not Classified
Inhalation dust / mist: Not Classified
SKIN CORROSION/IRRITATION: Not Classified
SERIOUS EYE DAMAGE/IRRITATION: Not Classified
RESPIRATORY OR SKIN SENSITISATION: Not Classified
GERM CELL MUTAGENICITY: Not Classified
CARCINOGENICITY: Not Classified
REPRODUCTIVE TOXICITY: Not Classified
SPECIFIC TARGET ORGAN TOXICITY (STOT)-SINGLE EXPOSURE: Not Classified
STOT-REPEATED EXPOSURE: Not Classified
ASPIRATION HAZARD: Not Classified

12. ECOLOGICAL INFORMATION

ECOTOXICITY: There are no specific data on nether this product nor each ingredient.
13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Avoid contact of spills of materials and runoff with soils and surface waterways. Consult an environmental professional to determine if local, regional, or national regulations would classify spilled or contaminated materials as hazardous waste. Use only approved transporter, recyclers, treatments, storages or disposal facilities.

PRODUCT DISPOSAL: Dispose according to local laws to an approved waste disposal facility.

EMPTY CONTAINER: Recycle when possible, or dispose of according to local laws.

14. TRANSPORT INFORMATION

Note: This mixture is not regulated as dangerous goods for transport.

<table>
<thead>
<tr>
<th>DOT (DEPARTMENT OF TRANSPORTATION)</th>
<th>IMO/IMDG</th>
<th>ICAO/IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN number</td>
<td>Not classified</td>
<td>Not classified</td>
</tr>
<tr>
<td>UN proper shipping name</td>
<td>Not classified</td>
<td>Not classified</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
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<td>Not classified</td>
</tr>
<tr>
<td>Packing group</td>
<td>Not classified</td>
<td>Not classified</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Special precautions for user</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

15. REGULATORY INFORMATION

USA


TSCA Inventory: All ingredients are listed or exempt.

EPCRA Section 312/313: No ingredients are listed above reportable quantities.

CERCLA Hazardous Substances: No ingredients are listed above reportable quantities.

Canada

Health Canada: WHMIS 2015
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Canadian Environmental Protection Act, 1999
- Toxic Substances List: A residual monomer (< 0.01 %) is listed
- Priority Substances List (PSL): One or more residual monomers (each content < 0.1 %) are listed
- Domestic Substances List (DSL)/Non-Domestic Substances List (NDSL): One or more ingredients are listed on either the DSL or NDSL

National Pollutant Release Inventory: No ingredients are listed above reportable quantities

Brazil
- ABNT: NBR 14725-4:2014

Chile
- INN: NCh 2245:2015
- List of Dangerous Substances to Health: One or more residual/hydrogenated monomers (each content < 0.1 %) are listed

Argentina
- IRAM: IRAM 41400-2006

Mexico
- STPS: NOM-018-STPS-2015

Ley General de Salud:
Neither the product (nor any component thereof) is classified as a "Hazardous chemical substance" according to the Ley General de Salud.

HMIS
Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used only in conjunction with a fully implemented HMIS® program by workers who have received appropriate HMIS® training. HMIS® is a registered trade and service mark of the NPCA. HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

HMIS RATING

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>FLAMMABILITY</th>
<th>PHYSICAL HAZARD</th>
<th>PERSONAL PROTECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>0</td>
<td>A</td>
</tr>
</tbody>
</table>

NFPA CODES

- HEALTH: 1
- FLAMMABILITY: 1
- PHYSICAL HAZARD: 0
- PERSONAL PROTECTION: A
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16. OTHER INFORMATION

REASON FOR ISSUE: GHS SDS format
PREPARED BY: ASACLEAN R&D Department, Asahi Kasei Corporation
Date Prepared: 09/28/2018

REVISION SUMMARY:
Section 1: PRODUCT AND COMPANY IDENTIFICATION, Section 2: GHS CLASSIFICATION and LABEL,
Section 7: LOADING TEMPERATURE, Section 9: AUTOIGNITION TEMPERATURE, FLASH POINT AND
METHOD, Section 10: CONDITIONS TO AVOID, Section 15: REGULATORY INFORMATION, Section 16:
OTHER INFORMATION.

DATA SOURCES: SDS provided by Suppliers and common industry information

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