1. IDENTIFICATION OF THE SUBSTANCE AND THE COMPANY

Trademark: Arichem HES-FR

Product Code: Arichem HES-FR

Product Description: High Efficiency Sulfonate
CAS name: Complex Sulphonate Salt Blend

Product Type: Commercial Product
(Product is a compound or mixture)

Recommended use: May be used as a flame retardant in polycarbonate resin formulations

Company: Arichem LLC
187 Sloss Industrial Road
Ariton, AL 36311
USA

Manufacturer: Arichem LLC
187 Sloss Industrial Road
Ariton, AL 36311
USA

Emergency Telephone Number: CHEMTREC (+1) 1-800-424-9300
8 am – 4:30 pm Monday-Friday: 334-762-2314

Email: BrendaHyatt@Arichem.com
2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

White crystalline powder
No characteristic odor
Spilled material may create slipping hazard
Can burn in a fire producing toxic smoke
Decomposition products are toxic.
No other significant fire, explosion or health hazard.

Skin Contact: May cause minor skin irritation

Eye Contact: Powder particles may be irritating to the eyes

Inhalation: Powder particles may be irritating – avoid inhalation

Ingestion: Effects unknown. If ingested, get trained medical help.

Other Information: For skin or eye contact, flush affected areas with water continuing for 20 minutes

3. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>CAS/EC/Index/REACH No</th>
<th>Concentration</th>
<th>% b-w</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proprietary Sulphonate Salt Blend</td>
<td>100%</td>
<td>% b-w</td>
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</table>

All components are listed on TSCA Inventory. See Sections 8 and 11 for exposure information.
This product does not contain substances to be mentioned according to EU Regulation No. 1907/2006 (REACH), annex II.
Not a hazardous substance or preparation according to EC-directives 67/548/EEC or 99/45/EC unless indicated.

4. FIRST AID MEASURES

If inhaled: Move to fresh air in the event of inhalation of concentrated dust. Give artificial respiration if not breathing; Give oxygen if breathing is difficult. Call for trained medical help.

On skin contact: Flush contacted skin areas with water for 20 minutes

On eye contact: Flush eyes with water for 20 minutes

On ingestion: Effects unknown. If ingested, get trained medical help.

Precautions: In all cases, get trained medical help immediately.
5. FIRE FIGHTING MEASURES

Autoignition Temperature: Not established

Explosive Limits:
Upper Not established
Lower Not established

Suitable Extinguishing Media: Use dry chemical, CO₂, water fog, or regular foam.

Unsuitable Extinguishing Media: Solid water stream not recommended.

Hazardous Decomposition Products: Vapors containing carbon dioxide, carbon monoxide, Oxides of SOx type

Special Protective Equipment for Firefighters: Self-contained breathing apparatus (NEN-EN137) and full protective fire fighting clothing

Specific Hazards: Flash Point: 950 °F (496 °C)
Vapors are toxic

6. ACCIDENTAL RELEASE MEASURES

Clean up: Collect for recycle into suitable containers for disposal.

Personal precautions: See Section 8

Environmental Precautions: Do not release into waterways or the environment

7. HANDLING AND STORAGE

Handling: Handle in a well-ventilated area. If adequate ventilation is not possible, use a NIOSH/MSHA or other approved dust/mist respirator or airline supplied respirator depending on concentrations. See section 8. Eye protection. Rubber gloves.

Storage: Store in closed container in cool, well ventilated location. Keep away from combustibles and other reactive materials. See Section 10. Rotate stock. Do not puncture containers.
8. EXPOSURE CONTROL / PERSONAL PROTECTION

Exposure Limits: No information unless noted below

Engineering Measures to Reduce Exposure PEL for nuisance dust is 15 mg/m\(^3\) for total dust and 5 mg/m\(^3\) for the respirable fraction. Ventilate use area to maintain dust concentrations below the PEL. If such ventilation fails or is not available, use NIOSH/MSHA dust/mist respirator (or equivalent). Use good industrial safety practices.

Hand Protection: Rubber gloves (NEN-EN 374)

Eye Protection: Safety glasses with side shields (NEN-EN 165-166).

Respiratory Protection: Self contained breathing apparatus in case of abnormal conditions and suitable respiratory equipment in case of insufficient ventilation (NEN-EN 149)

Body Protection: Long sleeved clothing (NEN-EN 340-369-465)

Hygiene Measures: When using, avoid eating, drinking, smoking.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid
Appearance: Crystalline Powder
Color: White
Odor: None

Melting Point/Range: Not established
Autoignition Temperature: Not established
Vapor Pressure: Not established

Water Solubility: ~ 30 g/100 ml at 77 °F (25 °C)
Evaporation Rate: Not established

Specific Gravity: >1 (water = 1)
VOC content (%): Negligible

Explosive Limits: Not a significant explosion hazard.
   Upper: Not established
   Lower: Not established
10. STABILITY AND REACTIVITY

Stability: Stable under ambient conditions. Hazardous polymerization does not occur.
Conditions to avoid: Avoid elevated temperatures (950 °F or 496 °C)
Do not use without adequate ventilation.
Hazardous Decomposition Products: Decomposition vapors include SO\textsubscript{x} type

11. TOXICOLOGICAL INFORMATION

LD50/oral/rat: Not established
LD50/dermal/rabbit: Not established
Subchronic toxicity: No information available
Primary Irritation: Skin
IARC: Not listed
OSHA: Not listed
NTP: Not listed
Remarks: Toxicological data has been taken from products of similar composition
Special Studies: None

12. ECOLOGICAL INFORMATION

Ecotoxicity Effects: Do not flush into surface water or sanitary sewer system
Ecotoxicity – Invertebrate Data: Ecological damages are not known or expected under normal use
Germany VCI (WGK): 0

13. DISPOSAL CONSIDERATIONS

Waste from residues/ unused products: Recycle if possible. Dispose in accordance with local regulations.
EWC waste disposal number: Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with regional waste company.
14. TRANSPORT INFORMATION

Transport Classification: Not regulated as hazardous for shipment, unless noted below, under current transportation regulations.

ADR/RID/AND Not regulated
IMDG Not regulated
ICAO-TI/IATA Not regulated
USA DOT Not regulated
USA DOT/IMO Not regulated

15. REGULATORY INFORMATION

EU Regulations:
Annex I, part 1 + 2: not mentioned.
With regard to possible decomposition products, see Section 10.

National Regulations
TSCA (USA) Listed*
EINECS (Europe) Listed

REACH Information Pre-registered

Does not intentionally contain banned chemicals.

* “Listed” means all chemical components are on respective inventory list and/or a qualifying exemption exists for one or more components. “Not listed” indicates that one or more components is restricted into that country or region.

16. OTHER INFORMATION

Arichem KSS-FR is a trademark of Arichem LLC.

MSDS Scope: This document conforms to Regulation EC No 1907/2006 REACH
This document is applicable to other countries and regions.

Prepared by: Arichem LLC

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