

SAS-60E

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date: 02/23/2016

Supersedes: 1/31/2016

Version: 5.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : SAS-60E
 Product form : Mixture

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

Use of the substance/mixture : Insulating Oil for High-Voltage Capacitors

1.3. Details of the supplier of the safety data sheet

JX NIPPON CHEMICAL TEXAS INC.
 10500 Bay Area Blvd.
 Pasadena, Texas 77507
 MRoot@jxncti.com

1.4. Emergency telephone number

Emergency number : 1-703-527-3887 (CHEMTREC)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Acute Tox. 4 (Inhalation: dust; mist) H332
 Skin Irrit. 2 H315
 Asp. Tox. 1 H304
 Aquatic Acute 1 H400
 Aquatic Chronic 1 H410

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H304 - May be fatal if swallowed and enters airways
 H315 - Causes skin irritation
 H332 - Harmful if inhaled
 H400 - Very toxic to aquatic life
 H410 - Very toxic to aquatic life with long lasting effects

Precautionary statements (GHS-US) :

P261 - Avoid breathing vapors, mist, spray
 P264 - Wash hands, forearms and face thoroughly after handling
 P271 - Use only outdoors or in a well-ventilated area
 P273 - Avoid release to the environment
 P280 - Wear eye protection, face protection, protective clothing, protective gloves
 P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER, a doctor
 P302+P352 - If on skin: Wash with plenty of soap and water
 P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
 P312 - Call a doctor, a POISON CENTER if you feel unwell
 P331 - Do NOT induce vomiting
 P332+P313 - If skin irritation occurs: Get medical advice/attention
 P362 - Take off contaminated clothing and wash before reuse
 P391 - Collect spillage
 P405 - Store locked up
 P501 - Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste

2.3. Other hazards

No additional information available

SAS-60E

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

2.4. Unknown acute toxicity (GHS US)

8% of mixture contains ingredients of unknown acute inhalation toxicity

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%
(Phenylethyl)benzene	(CAS No) 38888-98-1 / 612-00-0	55 - 60
Benzene, methyl(phenylmethyl)-	(CAS No) 27776-01-8	36 - 40
Benzene, ethylenated, residues	(CAS No) 68987-42-8	1 - 5
3,4-Epoxy cyclohexanecarboxylic acid (3,4-epoxycyclohexylmethyl) ester	(CAS No) 2386-87-0	< 1

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : If exposed or concerned, get medical attention/advice. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use. Never give anything to an unconscious person.
- First-aid measures after inhalation : IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if breathing is affected. If breathing is difficult, supply oxygen.
- First-aid measures after skin contact : IF ON SKIN (or clothing): Remove affected clothing and wash all exposed skin with water for at least 15 minutes. If irritation develops or persists, get medical attention.
- First-aid measures after eye contact : IF IN EYES: Immediately flush with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do so. If pain, blinking, or irritation develops or persists, get medical attention. Continue rinsing.
- First-aid measures after ingestion : IF SWALLOWED: rinse mouth thoroughly. Do not induce vomiting without advice from poison control center or medical professional. Get medical attention if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : May be fatal if swallowed and enters airways. Causes skin irritation. Harmful if inhaled.
- Symptoms/injuries after inhalation : Harmful if inhaled. May cause respiratory irritation.
- Symptoms/injuries after skin contact : Causes skin irritation.
- Symptoms/injuries after eye contact : Direct contact with the eyes is likely to be irritating.
- Symptoms/injuries after ingestion : May be fatal if swallowed and enters airways.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Carbon dioxide. Dry powder. Foam. Water fog. Water spray.
- Unsuitable extinguishing media : Do not use direct water stream. May spread fire.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Heating may cause a fire.
- Explosion hazard : Product is not explosive.
- Reactivity : No dangerous reactions known under normal conditions of use.

5.3. Advice for firefighters

- Precautionary measures fire : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Do not dispose of fire-fighting water in the environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.
- Other information : Danger of release of pyrolysis products of aromatic hydrocarbons.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Evacuate area. Ventilate area. Keep upwind. Spill should be handled by trained clean-up crews properly equipped with respiratory equipment and full chemical protective gear (see Section 8).

6.1.1. For non-emergency personnel

- Protective equipment : Wear Protective equipment as described in Section 8.
- Emergency procedures : Evacuate unnecessary personnel.

SAS-60E

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

6.1.2. For emergency responders

Protective equipment : Wear suitable protective clothing, gloves and eye or face protection. Approved supplied-air respirator, in case of emergency.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for cleaning up : Wear suitable protective clothing. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Sweep or shovel spills into appropriate container for disposal. This material and its container must be disposed of in a safe way, and as per local legislation.

6.4. Reference to other sections

See Sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Handle in accordance with good industrial hygiene and safety procedures. Do not handle until all safety precautions have been read and understood. Avoid contact with skin, eyes and clothing. Provide local exhaust or general room ventilation. Avoid breathing dust, mist or spray. Use solvent-resistant equipment. Do not use for cleaning purposes. Keep away from sources of ignition - No smoking. Take precautionary measures against static discharge. Use only non-sparking tools. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

Hygiene measures : Use duration (h/d): <4 h.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Provide solvent-resistant and impermeable floor.

Storage conditions : Store in a well-ventilated place. Keep cool. Keep the container tightly closed. Keep only in original container. Protect from sunlight. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Storage temperature : < 30 °C

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Benzene, methyl(phenylmethyl)- (27776-01-8)	
Remark (ACGIH)	OELs not established
Remark (OSHA)	OELs not established
(Phenylethyl)benzene (38888-98-1)	
Remark (ACGIH)	OELs not established
Remark (OSHA)	OELs not established
3,4-Epoxy-cyclohexanecarboxylic acid (3,4-epoxy-cyclohexylmethyl) ester (2386-87-0)	
Remark (ACGIH)	OELs not established
Remark (OSHA)	OELs not established
Benzene, ethylenated, residues (68987-42-8)	
Remark (ACGIH)	OELs not established
Remark (OSHA)	OELs not established

8.2. Exposure controls

Appropriate engineering controls : Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof equipment with flammable materials. Ensure adequate ventilation, especially in confined areas.

Personal protective equipment : Gloves. Protective goggles. Respiratory protection of the dependent type.



SAS-60E

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Hand protection	: Use gloves chemically resistant to this material when prolonged or repeated contact could occur. Gloves should be classified under Standard EN 374 or ASTM F1296. Suggested glove materials are: Neoprene, Nitrile/butadiene rubber, Polyethylene, Ethyl vinyl alcohol laminate, PVC or vinyl. Suitable gloves for this specific application can be recommended by the glove supplier.
Eye protection	: Wear eye protection, including chemical splash goggles and a face shield when possibility exists for eye contact due to spraying liquid or airborne particles.
Skin and body protection	: Wear long sleeves, and chemically impervious PPE/coveralls to minimize bodily exposure.
Respiratory protection	: Wear a NIOSH-approved (or equivalent) full-facepiece airline respirator in the positive pressure mode with emergency escape provisions. In case of inadequate ventilation or risk of inhalation of vapors, use suitable respiratory equipment with gas filter (type A2). Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: Transparent.
Odor	: Aromatic hydrocarbons.
Odor Threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: < -65 °C (-85 °F)
Freezing point	: No data available
Boiling point	: 260 - 287 °C (500 - 549 °F) (ASTM D 86)
Flash point	: 138 °C (280 °F) (ASTM D 92)
Auto-ignition temperature	: 464 °C (867 °F)
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: 0.004 kPa @ 20 °C
Relative vapour density at 20 °C	: 6.3 (Air = 1)
Relative density	: 1 g/cm ³ (Water = 1)
Solubility	: Water: 5 - 5.46 mg/l (19.5 - 20.5 °C) OECD 105 (Based on (phenylethyl)benzene)
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: < 20 mm ² /s (40 °C)
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: 0.6 - 4.2 vol %

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known under normal conditions of use.

10.2. Chemical stability

Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of hazardous reactions

Flammable mixtures possible in air when heated above flash point and/or during spraying or misting.

10.4. Conditions to avoid

Overheating.

10.5. Incompatible materials

Acids, alkalis, combustible materials. Oxidizing agents.

10.6. Hazardous decomposition products

Carbon monoxide. Pyrolysis products. Aromatic compounds.

SAS-60E

Safety Data Sheet

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Inhalation:dust; mist: Harmful if inhaled.

SAS-60E*	
LD50 oral rat	2531 mg/kg (male)
LD50 dermal rat	> 2000 mg/kg

Benzene, methyl(phenylmethyl)- (27776-01-8)	
LD50 oral rat	3015 mg/kg
LD50 dermal rabbit	> 2000 mg/kg

Skin corrosion/irritation : Causes skin irritation.
(Moderate skin irritant in rabbit test)*

Serious eye damage/irritation : Not classified
(Minimal irritation in rabbit test)*

Respiratory or skin sensitisation : Not classified.
(Buehler Test (Guinea Pig) - Non-sensitizing)*

Germ cell mutagenicity : Not classified
(Negative for mutagenicity with and without metabolic activation in an Ames test)*

Carcinogenicity : Not classified

SAS-60E*	
Additional information	NOEL of 50-249 mg/kg (28 days) in rats (OECD 407)

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : May be fatal if swallowed and enters airways.

Symptoms/injuries after inhalation : Harmful if inhaled. May cause respiratory irritation.

Symptoms/injuries after skin contact : Causes skin irritation.

Symptoms/injuries after eye contact : Direct contact with the eyes is likely to be irritating.

Symptoms/injuries after ingestion : May be fatal if swallowed and enters airways.

*All toxicological data is based on analogous products (SAS-40; SAS-40E)

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

SAS-60E	
LC50 fishes 1	0.31 mg/l (96 h) <i>Oryzias latipes</i> (Based on analogous substance SAS-296 (OECD 203))
EC50 Daphnia 1	1.2 mg/l (48 h) (Based on analogous substance Faradol 810 (OECD 202))
EC50 other aquatic organisms 1	> 0.56 mg/l (72 h); NOEC 0.56 mg/L <i>Scenedesmus subspicatus</i> (OECD 201)
NOEC (chronic)	0.56 mg/l

(Phenyl Toly)ethane	
EC50 other aquatic organisms 2	> 1000 mg/l Activated Sludge (OECD 209) (phenyltolyl)ethane

12.2. Persistence and degradability

SAS-60E	
Persistence and degradability	ca. 65% (45d) BOD in % of COD OECD 301 C. Moderately/partially biodegradable. This product is not readily biodegradable to OECD but is inherently biodegradable.
Chemical oxygen demand (COD)	2.69 g mg/g

12.3. Bioaccumulative potential

SAS-60E	
BCF other aquatic organisms 1	No information available.
Bioaccumulative potential	No information available.

12.4. Mobility in soil

SAS-60E	
Ecology - soil	No information available.

12.5. Other adverse effects

Other adverse effects : No data available.

SAS-60E

Safety Data Sheet

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SECTION 13: Disposal considerations

13.1. Waste treatment methods

- Waste treatment methods : Obtain the consent of pollution control authorities before discharging to wastewater treatment plants.
- Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Do not allow the product to be released into the environment.

SECTION 14: Transport information

In accordance with DOT

Not hazardous for transport

Transport by sea

- Transport document description : UN3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Contains: (Phenylethyl)benzene), 9, III, MP
- UN-No. (IMDG) : 3082
- Proper Shipping Name (IMDG) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains (phenylethyl) benzene)
- Class (IMDG) : 9 - Miscellaneous dangerous substances and articles
- Hazard labels (IMDG)



- Packing group (IMDG) : III - substances presenting low danger

Air transport

- Transport document description : UN3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Contains: (Phenylethyl)benzene), 9, III, MP
- UN-No.(IATA) : 3082
- Proper Shipping Name (IATA) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains (phenylethyl) benzene)
- Class (IATA) : 9 - Miscellaneous Dangerous Goods
- Hazard labels (IATA)



- Packing group (IATA) : III - Minor Danger
- Other information : Per IATA special provision A197, UN3082 substances may be shipped as "not restricted" provided that the net quantity in any receptacle does not exceed 5 kg or 5L and the packaging used meets defined standards.

SECTION 15: Regulatory information

15.1. US Federal regulations

SAS-60E

All chemical substances in this product are listed in the EPA (Environment Protection Agency) TSCA (Toxic Substances Control Act) Inventory or are exempt

SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
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15.2. International regulations

No additional information available.

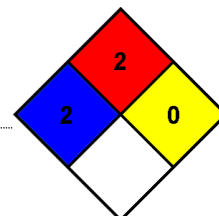
15.3. US State regulations

California Proposition 65

This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm.

SECTION 16: Other information

- Indication of changes : Revision 5.0
- Revision date : 02/23/2016
- Other information : Author: BCS.
- NFPA health hazard : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.



SAS-60E

Safety Data Sheet

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NFPA fire hazard : 2 - Must be moderately heated or exposed to relatively high temperature before ignition can occur.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.

HMIS III Rating

Health : 2

Flammability : 2

Physical : 0

Personal Protection :

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product