



XCELTHERM® SST

Safety Data Sheet

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

SECTION 1: Identification

1.1. Identification

Trade name XCELTHERM® SST

1.2. Recommended use and restrictions on use

Use of the substance/mixture: High operating temperature of 675°F (357°C) at low pressure; liquid phase heat transfer fluid for demanding applications. Recommended for chemical refining, oil and glycol recovery units, chemical processing, gas processing, petrochemical plants and many other applications.

Use of the substance/mixture: Heat Transfer Fluids

Recommended use: Heat transfer fluids

1.3. Supplier

Manufacturer

Radco Industries Inc.
CAGE Code 6ZS16
700 Kingsland Drive
Batavia, Illinois 60510
United States
T (630) 232-7966
www.radcoind.com

1.4. Emergency telephone number

Emergency number: For Chemical Emergency Call CHEMTREC 24hr/day 7days/week
Within USA and Canada: 1-800-424-9300
Outside USA and Canada: +1 703-741-5970
(collect calls accepted)

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Specific target organ toxicity (repeated exposure) Category 2	H373	May cause damage to organs (liver, thyroid gland) through prolonged or repeated exposure (oral)
Aspiration hazard Category 1	H304	May be fatal if swallowed and enters airways

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US):



Signal word (GHS US):

Danger

Hazard statements (GHS US):

H304 - May be fatal if swallowed and enters airways

H373 - May cause damage to organs (liver, thyroid gland) through prolonged or repeated exposure (oral)

Precautionary statements (GHS US):

P260 - Do not breathe mist.

P301+P310 - If swallowed: Immediately call a POISON CENTER, a doctor.

P314 - Get medical advice/attention if you feel unwell.

P331 - Do NOT induce vomiting.

P405 - Store locked up.

P501 - Dispose of contents/container to an approved waste disposal plant.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients**3.1. Substances**

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS US classification
Diisopropyl-1,1'-biphenyl (Main constituent)	CAS-No.: 69009-90-1	93 – 97	Asp. Tox. 1, H304
Tris(1-methylethyl)-1,1'-biphenyl (Constituent)	CAS-No.: 29225-91-0	3 – 7	Not classified

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures**4.1. Description of first aid measures**

First-aid measures general:

Call a physician immediately.

First-aid measures after inhalation:

Remove person to fresh air and keep comfortable for breathing.

First-aid measures after skin contact:

Wash skin with plenty of water.

First-aid measures after eye contact:

Rinse eyes with water as a precaution.

First-aid measures after ingestion:

Do not induce vomiting. Call a physician immediately.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects:

Not expected to present a significant hazard under anticipated conditions of normal use.

Symptoms/effects after inhalation:

May cause respiratory irritation.

Symptoms/effects after skin contact:

May cause moderate irritation.

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

Symptoms/effects after ingestion: Gastrointestinal complaints. Risk of lung edema.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Specific hazards arising from the chemical

Hazardous decomposition products in case of fire: Toxic fumes may be released.

5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures: Ventilate spillage area. Do not breathe dust/fume/gas/mist/vapors/spray.

6.1.2. For emergency responders

Protective equipment: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up: Take up liquid spill into absorbent material.

Other information: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling: Ensure good ventilation of the work station. Wear personal protective equipment. Do not breathe dust/fume/gas/mist/vapors/spray.

Hygiene measures: Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store locked up. Store in a well-ventilated place. Keep cool.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

XCELTHERM® SST
No additional information available
Tris(1-methylethyl)-1,1'-biphenyl (29225-91-0)
No additional information available
Diisopropyl-1,1'-biphenyl (69009-90-1)
No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls: Ensure good ventilation of the work station.
 Environmental exposure controls: Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:
Protective gloves
Eye protection:
Safety glasses
Skin and body protection:
Wear suitable protective clothing
Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment

Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Appearance:	Colorless liquid.
Color:	Colorless
Odor:	Mixture contains one or more component(s) which have the following odour:
Odor threshold:	No data available

pH:	No data available
Melting point:	No data available
Freezing point:	No data available
Boiling point:	300 – 355 °C
Flash point:	No data available
Relative evaporation rate (butyl acetate=1):	No data available
Flammability:	Not applicable.
Vapor pressure:	< 12.9 mm Hg at 38°C (100°F)
Relative vapor density at 20°C:	No data available
Relative density:	0.96 (Water = 1)
Density:	0.96 g/ml
Solubility:	Water: 12.3 µg/l
Partition coefficient n-octanol/water (Log Pow):	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity, kinematic:	13.5 mm ² /s at 38°C (100°F)
Viscosity, dynamic:	No data available
Explosion limits:	No data available
Explosive properties:	No data available
Oxidizing properties:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity**10.1. Reactivity**

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information**11.1. Information on toxicological effects**

Acute toxicity (oral):	Not classified
Acute toxicity (dermal):	Not classified
Acute toxicity (inhalation):	Not classified
Skin corrosion/irritation:	Not classified
Carcinogenicity:	Not classified
Aspiration hazard:	May be fatal if swallowed and enters airways.
Viscosity, kinematic:	13.5 mm ² /s at 38°C (100°F)
Symptoms/effects:	Not expected to present a significant hazard under anticipated conditions of normal use.
Symptoms/effects after inhalation:	May cause respiratory irritation.
Symptoms/effects after skin contact:	May cause moderate irritation.
Symptoms/effects after eye contact:	Direct contact with the eyes is likely to be irritating.
Symptoms/effects after ingestion:	Gastrointestinal complaints. Risk of lung edema.
STOT-single exposure:	Not classified
STOT-repeated exposure:	May cause damage to organs (liver, thyroid gland) through prolonged or repeated exposure (oral).
Reproductive toxicity:	Not classified

Diisopropyl-1,1'-biphenyl (69009-90-1)

LD50 oral rat:	> 5000 mg/kg (OECD 401)
LD50 dermal rabbit:	> 5000 mg/kg (OECD 402)
LC50 Inhalation - Rat:	> 5 mg/l (OECD 403 (Aerosol))

Tris(1-methylethyl)-1,1'-biphenyl (29225-91-0)

Serious eye damage/irritation:	Not classified
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Diisopropyl-1,1'-biphenyl (69009-90-1)

, dermal, rabbit	not irritating (OECD 404)
Serious eye damage/irritation:	Not classified

Tris(1-methylethyl)-1,1'-biphenyl (29225-91-0)

Respiratory or skin sensitization:	Not classified
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Diisopropyl-1,1'-biphenyl (69009-90-1)

Eye irritation	
Respiratory or skin sensitization:	Not classified

Tris(1-methylethyl)-1,1'-biphenyl (29225-91-0)	
Germ cell mutagenicity:	Not classified
Diisopropyl-1,1'-biphenyl (69009-90-1)	
Skin sensitization, Guinea pig	negative (No skin sensitization)
Germ cell mutagenicity:	Not classified
Diisopropyl-1,1'-biphenyl (69009-90-1)	
Ames test	negative (OECD 471)
Genetic mutation	negative (OECD 476)
Chromosome Aberration	negative (OECD 473)
Diisopropyl-1,1'-biphenyl (69009-90-1)	
IARC group:	Not classified
Diisopropyl-1,1'-biphenyl (69009-90-1)	
NOAEL (animal/male, F0/P):	150 mg/kg body weight per day, rat (oral) (OECD 407)
Additional data:	Teratogenic effects: negative (OECD 406)
Diisopropyl-1,1'-biphenyl (69009-90-1)	
Additional data:	Specific target organ toxicity - Repeated Exposure, liver, thyroid, oral, rat: < 35 mg/kg bw/day (28 d, OECD 407)

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

XCEL THERM® SST	
LC50 - Fish [1]:	> 8.24 µg/l Rainbow Trout; 96 hour NOEC (ECC guideline C.1, OECD 203)
EC50 - Crustacea [1]:	> 4.52 µg/l 48 hours (Method ECC C.2 (2,3))
NOEC (acute):	0.0062 mg/l Daphnia magna, flow-through (OECD 202)
Diisopropyl-1,1'-biphenyl (69009-90-1)	
LC50 - Fish [1]:	> 8.2 µg/l (OECD 203, dynamic)
EC50 - Crustacea [1]:	> 4.8 µg/l (daphnia) (OECD 202, dynamic, 48 h)
NOEC (acute):	0.01 mg/l (algae) (OECD 201, 72 h)
NOEC (chronic):	0.0063 mg/l (OECD 202, part 2, 21 d)

12.2. Persistence and degradability

Diisopropyl-1,1'-biphenyl (69009-90-1)	
Persistence and degradability:	Not readily biodegradable in the soil. Not readily biodegradable in water.

12.3. Bioaccumulative potential

Diisopropyl-1,1'-biphenyl (69009-90-1)	
Bioconcentration factor (BCF REACH):	> 500
Partition coefficient n-octanol/water (Log Kow):	6.7 (calculated)

12.4. Mobility in soil

Diisopropyl-1,1'-biphenyl (69009-90-1)	
Organic Carbon Normalized Adsorption Coefficient (Log Koc):	> 5 (calculated)
Ecology - soil:	Adsorbs into the soil. Low potential for mobility in soil.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations**13.1. Disposal methods**

Regional waste regulation:	Disposal must be done according to official regulations.
Waste treatment methods:	Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations:	Avoid release to the environment. Discharging into rivers and drains is forbidden. Disposal must be done according to official regulations. an approved waste disposal plant.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA / ICAO / ADN / RID / ADG

14.1. UN number

DOT NA No:	Not applicable
UN-No.:	Not applicable
UN-No. (IMDG):	3082
UN-No. (IATA):	3082

14.2. UN proper shipping name

Proper Shipping Name (DOT):	Not applicable
Proper Shipping Name (TDG):	Not applicable
Proper Shipping Name (IMDG):	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains Diisopropyl biphenyl)
Proper Shipping Name (IATA):	Environmentally hazardous substance, liquid, n.o.s. (Contains Diisopropyl biphenyl)

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Transport document description (IMDG):	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains Diisopropyl biphenyl), 9, III
Transport document description (IATA):	UN 3082 Environmentally hazardous substance, liquid, n.o.s. (Contains Diisopropyl biphenyl), 9, III

14.3. Transport hazard class(es)

DOT

Transport hazard class(es) (DOT): Not applicable

TDG

Transport hazard class(es) (TDG): Not applicable

IMDG

Transport hazard class(es) (IMDG): 9

Hazard labels (IMDG): 9



IATA

Transport hazard class(es) (IATA): 9

Hazard labels (IATA): 9



14.4. Packing group

Packing group (DOT): Not applicable

Packing group (TDG): Not applicable

Packing group (IMDG): III

Packing group (IATA): III

14.5. Environmental hazards

Other information: No supplementary information available.

14.6. Special precautions for user

DOT

No data available

TDG

Excepted quantities (TDG): E1

IMDG

Special provision (IMDG): 274, 335, 969

Limited quantities (IMDG): 5 L

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Excepted quantities (IMDG):	E1
Packing instructions (IMDG):	LP01, P001
Packing provisions (IMDG):	PP1
IBC packing instructions (IMDG):	IBC03
Tank instructions (IMDG):	T4
Tank special provisions (IMDG):	TP1, TP29
EmS-No. (Fire):	F-A - FIRE SCHEDULE Alfa - GENERAL FIRE SCHEDULE
EmS-No. (Spillage):	S-F - SPILLAGE SCHEDULE Foxtrot - WATER-SOLUBLE MARINE POLLUTANTS
Stowage category (IMDG):	A

IATA

PCA Excepted quantities (IATA):	E1
PCA Limited quantities (IATA):	Y964
PCA limited quantity max net quantity (IATA)	30kgG
PCA packing instructions (IATA):	964
PCA max net quantity (IATA):	450L
CAO packing instructions (IATA):	964
CAO max net quantity (IATA):	450L
Special provision (IATA):	A97, A158, A197, A215
ERG code (IATA):	9L

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

Name	CAS-No.	Listing	Commercial status	Flags
Tris(1-methylethyl)-1,1'-biphenyl	29225-91-0	Present	Active	
Diisopropyl-1,1'-biphenyl	69009-90-1	Present	Active	

This product or mixture is not known to contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

CANADA

Tris(1-methylethyl)-1,1'-biphenyl (29225-91-0)

Listed on the Canadian NDSL (Non-Domestic Substances List)

Diisopropyl-1,1'-biphenyl (69009-90-1)

Listed on the Canadian NDSL (Non-Domestic Substances List)

EU-Regulations

No additional information available

National 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, developmental and/or reproductive harm

SECTION 16: Other information

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

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Full text of H-phrases	
H304	May be fatal if swallowed and enters airways
H373	May cause damage to organs through prolonged or repeated exposure

This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any particular process or for any particular purpose. Such information stated is to the best of Radco's knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made to its accuracy, reliability, or completeness, purchasers, users and distributors are not relying on any promise, representation, or recommendation made by Radco, and Radco does not accept liability for any loss or damage that may occur from the use of this information. Final determination of suitability of any material is the sole responsibility of the user. All material should be used with caution to guard against unknown hazards. Although certain hazards are described herein, Radco does not guarantee that these are the only hazards that exist.