SAFETY DATA SHEET (SDS)

Prepared in accordance with the Globally Harmonized System (GHS) and Regulation (EC) No. 1907/2006 (REACH, as amended)

SECTION 1: IDENTIFICATION OF THE SUBSTANCE AND COMPANY

1.1 Product Identifier

Parameter	Details
Trade Name	Iso E Super®
Manufacturer	International Flavors & Fragrances Inc. – IFF
IFF IPC Number	91841
Representative IFF Product Code	00098663
Chemical Name	Tetramethyl acetyloctahydronaphthalenes
Main-Isomer Name	1-(2,3,8,8-Tetramethyl-1,2,3,4,5,6,7,8-octahydronaphthalen-2-yl)ethanone
Chemical Family	Alicyclic ketones
Substance Type	Multi-constituent isomeric substance
CAS Numbers	54464-57-2 / 68155-66-8 / 68155-67-9
EC Number	915-730-3
Molecular Formula	C_{16} H_{26} O
Molecular Weight	234.2 g/mol
REACH Registration Number	01-2119489989-04, subject to supplier confirmation
Grade	Professional perfumery grade

1.2 Recommended Uses

- Ingredient in fragrance mixtures
- Fine-fragrance formulation
- Personal-care fragrances
- Soap and detergent fragrances
- Fabric-care fragrances
- Air-care products
- Household fragrances
- Woody, amber and floral accords
- Professional olfactory evaluation

1.3 Uses Advised Against

- Internal consumption
- Direct undiluted skin application
- Use as a finished consumer product
- Food or flavour use

- Pharmaceutical use
- Use by children
- Uncontrolled environmental release
- Use contrary to applicable IFRA Standards
- Use without finished-product safety assessment

1.4 Supplier

Aromology Trading LLC
G05 Al Ghazal Building
Nadd Al Hamar
Dubai, United Arab Emirates

Website: www.aromology.com
Email: info@aromology.com
Telephone: +971 505197601

1.5 Original Manufacturer

International Flavors & Fragrances Inc. – IFF

The latest manufacturer-issued SDS and technical documentation shall prevail.

1.6 Emergency Contact

Contact the nearest poison-control centre, emergency medical service or qualified physician. For transport emergencies, refer to the emergency-response number stated on the applicable shipping documents.

SECTION 2: HAZARDS IDENTIFICATION

2.1 GHS Classification

Hazard Class	Classification
Skin Corrosion/Irritation	Category 2
Skin Sensitisation	Category 1B
Hazardous to the Aquatic Environment—Acute	Category 2
Hazardous to the Aquatic Environment—Chronic	Category 1

2.2 Label Elements

Signal Word

Warning

Hazard Pictograms

- Exclamation mark
- Environment

Hazard Statements

- H315: Causes skin irritation.
- H317: May cause an allergic skin reaction.
- H401: Toxic to aquatic life.
- H410: Very toxic to aquatic life with long-lasting effects.

Precautionary Statements

- P261: Avoid breathing vapours, mist or spray.
- P264: Wash skin thoroughly after handling.
- P272: Contaminated work clothing should not be allowed out of the workplace.
- P273: Avoid release to the environment.
- P280: Wear protective gloves and eye protection.
- P302+P352: IF ON SKIN: Wash with plenty of water and soap.
- P332+P313: If skin irritation occurs: Get medical advice.
- P333+P313: If skin irritation or rash occurs: Get medical advice.
- P362+P364: Take off contaminated clothing and wash it before reuse.
- P391: Collect spillage.
- P501: Dispose of contents and container through an approved waste-disposal facility.

2.3 Other Hazards

- Prolonged or repeated skin exposure may produce allergic contact dermatitis.
- Spilled product may create a slipping hazard.
- Heated material may produce concentrated vapours.
- The material is highly persistent in fragrance applications.
- Prevent release into drains, soil and waterways.
- The substance is not readily biodegradable.
- Concentrated product is intended only for professional manufacturing use.

2.4 PBT and vPvB Assessment

A batch- and jurisdiction-specific assessment should be obtained from IFF.

The high log P and poor ready biodegradability require careful environmental handling.

2.5 Endocrine-Disrupting Properties

No endocrine-disrupting classification is assigned in this representative SDS.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance Description

Iso E Super is a multi-constituent mixture of closely related tetramethyl acetyloctahydronaphthalene isomers.

Chemical Identity	CAS Number	Representative Content
Tetramethyl Acetyloctahydronaphthalenes	54464-57-2 / 68155-66-8 / 68155-67-9	Approximately 99–100%

3.2 Main Isomer

1-(2,3,8,8-Tetramethyl-1,2,3,4,5,6,7,8-octahydronaphthalen-2-yl)ethanone

The commercial product contains multiple structural and stereochemical isomers.

3.3 Stabilised Commercial Grade

Certain IFF commercial grades may contain a small quantity of antioxidant, including tocopherol.

Where the supplied product is Iso E Super TOCO, the presence and concentration of tocopherol must be confirmed from the current IFF specification.

3.4 Hazardous Components

The complete substance contributes to the classifications:

- Skin irritation
- Skin sensitisation
- Acute aquatic toxicity
- Chronic aquatic toxicity

SECTION 4: FIRST-AID MEASURES

4.1 Inhalation

- Remove the affected person to fresh air.
- Keep at rest in a position comfortable for breathing.
- Loosen restrictive clothing.
- Obtain medical attention if coughing, headache, nausea or respiratory discomfort persists.
- If breathing stops, trained personnel should provide artificial respiration.

4.2 Skin Contact

- Remove contaminated clothing and footwear.
- Wash affected skin thoroughly with water and soap.
- Continue washing for several minutes.
- Obtain medical advice if redness, irritation, itching or rash develops.
- Wash contaminated clothing before reuse.

4.3 Eye Contact

- Rinse cautiously with clean water for at least 15 minutes.
- Hold eyelids open during rinsing.
- Remove contact lenses where present and easy to do.
- Obtain medical advice if irritation persists.

4.4 Ingestion

- Rinse the mouth with water.
- Do not induce vomiting unless directed by medical personnel.
- Never give anything by mouth to an unconscious person.
- Obtain medical advice.

4.5 Most Important Symptoms and Effects

Potential symptoms include:

- Skin redness
- Burning or irritation
- Itching
- Allergic rash
- Temporary eye discomfort
- Headache or nausea after excessive vapour exposure

Sensitisation may result in an allergic response following later exposure.

4.6 Medical Treatment

Treat symptomatically.

No specific antidote is known.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable Extinguishing Media

- Carbon dioxide
- Dry chemical powder
- Foam
- Water fog

5.2 Unsuitable Extinguishing Media

Do not use a direct high-pressure water jet, as it may spread the burning liquid.

5.3 Specific Hazards

The product is not classified as a flammable liquid under the cited IFF data, but it is combustible and may burn when strongly heated.

Combustion or thermal decomposition may produce:

- Carbon monoxide
- Carbon dioxide
- Irritating smoke
- Unidentified organic decomposition products

5.4 Protective Equipment for Firefighters

Wear:

- Self-contained breathing apparatus
- Full protective clothing
- Chemical-resistant gloves
- Protective footwear

5.5 Additional Fire-Fighting Advice

- Cool exposed containers using water spray.
- Remove containers from the fire area where safe.
- Prevent contaminated firefighting water from entering drains or waterways.
- Approach the fire from upwind.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions

- Restrict access to the affected area.
- Provide adequate ventilation.
- Avoid inhalation of vapour or mist.
- Avoid skin and eye contact.
- Wear suitable protective gloves and eye protection.
- Remove ignition sources as a general precaution.
- Use respiratory protection for major spills where ventilation is inadequate.

6.2 Environmental Precautions

- Prevent entry into drains, sewers and waterways.
- Avoid contamination of soil.
- Contain significant releases.
- Notify the appropriate authority if environmental contamination occurs.

6.3 Containment and Cleaning

- Stop the leak where safe.
- Absorb with sand, earth, vermiculite or another inert material.
- Transfer absorbed waste into a suitable labelled container.
- Clean the affected surface with detergent and water.
- Do not wash uncontrolled quantities into drains.
- Dispose of collected waste according to local regulations.

6.4 Reference to Other Sections

See:

- Section 8 for personal protective equipment
- Section 13 for disposal guidance
- Section 14 for transport information

SECTION 7: HANDLING AND STORAGE

7.1 Safe Handling

- Avoid excessive inhalation of concentrated vapours.
- Use in a well-ventilated area.
- Avoid prolonged or repeated skin contact.
- Avoid contact with eyes.
- Wear suitable protective gloves.
- Follow good manufacturing and industrial-hygiene practices.
- Wash exposed skin after handling and before breaks.
- Do not eat, drink or smoke in the work area.
- Keep heated processes at the lowest necessary temperature.
- Use clean and dry dispensing equipment.
- Keep the container tightly closed when not in use.

7.2 Storage Conditions

Store:

- In a cool, dry and ventilated area
- At approximately 15–25 °C
- In the original tightly closed container
- With containers upright
- Away from direct heat
- Away from sunlight
- Away from strong acids
- Away from strong alkalis
- Away from oxidising agents
- Away from food and beverages
- Out of reach of children

7.3 Packaging Materials

Suitable packaging may include:

- Original IFF containers
- Lacquer-lined aluminium
- Stainless steel
- Amber glass
- Manufacturer-approved chemical-resistant packaging

7.4 Specific End Use

Professional use as a fragrance ingredient in fragrance compounds and fragranced consumer products.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Occupational Exposure Limits

No specific occupational exposure limit is established for the complete commercial substance in this representative document.

Verify national exposure requirements.

8.2 Engineering Controls

- Provide adequate general ventilation.
- Use local exhaust ventilation around open tanks and filling stations.
- Minimise vapour and aerosol generation.
- Provide an eyewash station.
- Provide hand-washing facilities.
- Increase ventilation when the material is heated.

8.3 Personal Protective Equipment

Eye and Face Protection

Wear:

- Safety glasses with side shields
- Chemical splash goggles where splashing is possible

Hand Protection

Wear chemical-resistant gloves such as:

- Nitrile rubber
- Neoprene

- Butyl rubber

Confirm breakthrough time with the glove manufacturer.

Skin and Body Protection

Wear:

- Laboratory coat
- Long sleeves
- Closed protective footwear
- Chemical-resistant apron for bulk handling

Respiratory Protection

Normally not required under adequate ventilation.

Where engineering controls are insufficient, use an approved respirator with:

- Organic-vapour cartridges
- Suitable particulate filtration where mist is generated

8.4 Hygiene Measures

- Wash hands and exposed skin after handling.
- Remove contaminated clothing promptly.
- Wash contaminated clothing before reuse.
- Do not eat, drink or smoke in chemical-handling areas.
- Maintain good housekeeping.

8.5 Environmental Exposure Controls

Prevent uncontrolled release into drains, soil and watercourses.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Property	Representative Information
Physical State	Liquid at 20°C
Appearance	Clear mobile liquid
Colour	Colourless to pale yellow
Odour	Smooth, woody, amber and velvet-like
Odour Threshold	Very low
pH	Not applicable
Melting/Freezing Point	Below approximately –20°C
Boiling Point	Approximately 290.4°C
Flash Point	Approximately 134°C

Auto-Ignition Temperature	Approximately 260°C
Flammability	Combustible; not classified as flammable under the cited SDS
Vapour Pressure at 23°C	Approximately 0.00233 hPa
Relative Density at 20°C	Approximately 0.96
Refractive Index at 20°C	Approximately 1.497–1.500
Water Solubility at 20°C	Approximately 0.00268 g/L
Alcohol Solubility	Soluble
Log Pow	Approximately 5.65–5.7
Evaporation Rate	Slow
Viscosity	Low to moderate
Explosive Properties	Not expected to be explosive
Oxidising Properties	Not oxidising
Substantivity	Greater than 48 hours
Typical IFF Use Level	Up to 10%

The typical use level is olfactive guidance and not an IFRA maximum.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

The product presents no significant reactivity hazard under normal conditions.

10.2 Chemical Stability

Stable under recommended storage and handling conditions.

10.3 Possibility of Hazardous Reactions

Hazardous polymerisation is not expected.

The material may react with incompatible chemicals.

10.4 Conditions to Avoid

Avoid:

- Direct heat
- Excessive temperatures
- Open flames
- Prolonged air exposure
- Strong ultraviolet exposure
- Contamination
- Repeated heating

10.5 Incompatible Materials

- Strong acids
- Strong alkalis
- Strong oxidising agents

10.6 Hazardous Decomposition Products

Combustion may produce:

- Carbon monoxide
- Carbon dioxide
- Irritating organic vapours
- Unidentified organic decomposition compounds

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Acute Oral Toxicity

Test	Representative Result
Oral LD_{50}, Rat	Greater than 5,000 mg/kg

The material is not classified for acute oral toxicity based on the cited result.

11.2 Acute Dermal Toxicity

Test	Representative Result
Dermal LD_{50}, Rat	Greater than 5,000 mg/kg

The material is not classified for acute dermal toxicity based on the cited result.

11.3 Skin Corrosion/Irritation

Causes skin irritation.

Testing cited by IFF indicates skin irritation under an OECD 439 assessment.

11.4 Serious Eye Damage/Irritation

Not classified for serious eye damage based on available data.

Direct contact may nevertheless cause temporary discomfort.

11.5 Respiratory Sensitisation

No respiratory-sensitisation classification is assigned.

11.6 Skin Sensitisation

May cause an allergic skin reaction.

Sensitisation was identified under an OECD 429 mouse local lymph-node assessment.

11.7 Germ-Cell Mutagenicity

No mutagenicity classification is assigned in this representative document.

11.8 Carcinogenicity

No carcinogenicity classification is assigned.

11.9 Reproductive Toxicity

No reproductive-toxicity classification is assigned.

11.10 Specific Target Organ Toxicity—Single Exposure

Not classified.

Excessive vapour exposure may cause temporary discomfort.

11.11 Specific Target Organ Toxicity—Repeated Exposure

Not classified in the cited SDS.

11.12 Aspiration Hazard

Not classified as an aspiration hazard.

11.13 Likely Routes of Exposure

- Skin contact
- Eye contact
- Inhalation of vapours or mist
- Accidental ingestion

SECTION 12: ECOLOGICAL INFORMATION

12.1 Aquatic Toxicity

Test Organism	Test Result
Bluegill Sunfish, 96-hour LC_{50}	1.3 mg/L
Daphnia magna, 48-hour EC_{50}	1.38 mg/L
Green Algae, 72-hour EC_{50}	2.6 mg/L
Bacterial NOEC, 42 hours	Greater than 100 mg/L

12.2 Persistence and Degradability

The material is not readily biodegradable.

Representative result:

11% degradation after 28 days under OECD 301C.

12.3 Bioaccumulative Potential

The log Pow of approximately 5.65 indicates potential for bioaccumulation and partitioning into organic matter.

12.4 Mobility in Soil

Due to very low water solubility and high hydrophobicity, the product is expected to adsorb strongly to soil and sediment.

12.5 PBT and vPvB Assessment

A current manufacturer assessment should be consulted.

12.6 Other Adverse Effects

- Very toxic to aquatic life with long-lasting effects.
- May accumulate in sediment or organic matter.
- Avoid all uncontrolled environmental release.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Product Disposal

Disposal with normal domestic waste is not appropriate.

Dispose of through an authorised chemical-waste contractor.

Do not discharge into:

- Drains
- Sewers
- Soil
- Surface water
- Groundwater

13.2 Contaminated Packaging

- Empty containers may retain product residue.
- Do not reuse uncleaned containers.
- Send containers to an approved recycling or waste-treatment facility.

- Do not cut, weld, puncture or burn contaminated containers.

13.3 Waste Treatment

Controlled incineration may be appropriate where authorised.

Waste classification must be determined according to local legislation.

SECTION 14: TRANSPORT INFORMATION

14.1 UN Transport Classification

Parameter	Details
UN Number	UN 3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s.
Technical Name	Octahydro Tetramethyl Naphthalenyl Ethanone
Transport Hazard Class	9
Packing Group	III
Environmental Hazard	Yes
Marine Pollutant	Yes
Special Precautions	Prevent leakage and environmental release

14.2 ADR/RID

- UN 3082
- Environmentally hazardous substance, liquid, n.o.s.
- Class 9
- Packing Group III
- Environmentally hazardous

14.3 IMDG

- UN 3082
- Environmentally hazardous substance, liquid, n.o.s.
- Class 9
- Packing Group III
- Marine pollutant

14.4 IATA/ICAO

- UN 3082
- Environmentally hazardous substance, liquid, n.o.s.
- Class 9
- Packing Group III

14.5 Limited and Excepted Quantities

Applicable exemptions depend on:

- Package size
- Transport mode
- Destination
- Current dangerous-goods regulations

A qualified dangerous-goods specialist must confirm shipment classification.

SECTION 15: REGULATORY INFORMATION

15.1 Applicable Regulations

The product should be assessed under:

- Regulation (EC) No. 1907/2006 concerning REACH
- Regulation (EC) No. 1272/2008 concerning CLP
- Regulation (EU) 2020/878 concerning SDS requirements
- Regulation (EC) No. 1223/2009 concerning cosmetic products
- Regulation (EU) 2023/1545 concerning fragrance-allergen labelling
- Applicable IFRA Standards
- Applicable UAE occupational-safety requirements
- Applicable transport regulations

15.2 Substance Identification

Regulatory Parameter	Details
Substance Name	Tetramethyl Acetyloctahydronaphthalenes
EC Number	915-730-3
CAS Numbers	54464-57-2 / 68155-66-8 / 68155-67-9
REACH Registration	Manufacturer confirmation required
Single Pure Isomer	No
Multi-Constituent Substance	Yes

15.3 Cosmetic and Perfumery Use

Use requires:

- Current IFRA conformity assessment
- Finished-product exposure assessment
- EU fragrance-allergen review
- Appropriate ingredient labelling
- Stability and compatibility testing
- Regional regulatory review

15.4 Chemical Safety Assessment

No independent chemical safety assessment has been completed by Aromology Trading LLC.

The current IFF SDS and regulatory documentation must be consulted.

SECTION 16: OTHER INFORMATION

16.1 Olfactive Description

Iso E Super provides:

- Smooth woody character
- Soft amber warmth
- Cedar-like facets
- Velvet-like texture
- Diffusive radiance
- Floralising effects
- Fullness and volume
- Long-lasting substantivity

16.2 Performance

The material is particularly useful in:

- Fine fragrances
- Woody and amber accords
- Floral compositions
- Musks
- Soaps
- Liquid detergents
- Fabric-care products
- Household fragrances

16.3 Sustainability Information

IFF describes Iso E Super as:

- 75% renewable
- Natural derived
- Upcycled
- Vegan suitable
- Not readily biodegradable

These manufacturer claims apply only to the qualifying IFF commercial grade.

16.4 Typical Use Level

IFF provides an olfactive typical-use recommendation of:

Up to 10%

This is not:

- An IFRA maximum
- A legal cosmetic limit
- A toxicological safety conclusion
- An instruction for direct skin use

16.5 Recommended Shelf Life

24 months from the manufacturing date when stored unopened under recommended conditions, unless the original IFF documentation states otherwise.

16.6 Hazard Statement Text

- H315: Causes skin irritation.
- H317: May cause an allergic skin reaction.
- H401: Toxic to aquatic life.
- H410: Very toxic to aquatic life with long-lasting effects.

16.7 Abbreviations

Abbreviation	Meaning
GHS	Globally Harmonized System
CLP	Classification, Labelling and Packaging
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
PBT	Persistent, Bioaccumulative and Toxic
vPvB	Very Persistent and Very Bioaccumulative
ADR	European road transport regulations
IMDG	International Maritime Dangerous Goods Code
IATA	International Air Transport Association
IFRA	International Fragrance Association
LC_{50}	Median lethal concentration
EC_{50}	Median effective concentration
LD_{50}	Median lethal dose
NOEC	No observed effect concentration
PPE	Personal protective equipment

DISCLAIMER

This Safety Data Sheet is a representative professional template prepared for:

Iso E Super® – IFF

Product specifications and regulatory status may vary according to:

- Commercial grade
- Isomer composition
- Added tocopherol or antioxidant
- Manufacturing location
- Regional SDS requirements
- Batch specification
- Updated toxicological data
- Updated environmental data
- Changes in transport regulations

Before formal issue or commercial distribution, this document must be verified against:

- Current IFF Safety Data Sheet
- Current IFF technical specification
- Original batch Certificate of Analysis
- Current IFRA Certificate of Conformity
- Current EU allergen declaration
- Applicable transport regulations
- Destination-country requirements

Where this document differs from current IFF documentation, the original manufacturer documentation shall prevail.

Aromology Trading LLC, the manufacturer, distributor and finished-product producer remain responsible for correct classification, labelling, safe handling, workplace risk assessment, transport compliance, IFRA conformity and finished-product safety.

Authorised By:
Fozia Khot
Director