SAFETY DATA SHEET
according to the OSHA Hazard Communication Standard

KOAVONE

Version	Revision Date:	SDS Number:	Date of last issue: 11/25/2025
11.2	12/23/2025	R00000225388	Date of first issue: 07/11/2007

SECTION 1. IDENTIFICATION

Product name : KOAVONE

CAS-No. : 81786-73-4
Sales Number : 00110502

Sales Number : 00110502

SDS Number : R00000225388

Recommended use of the chemical and restrictions on use

Product Use Description : Fragrance Ingredient

Manufacturer or supplier's details

Company name of supplier : IFF Inc.

Address : 600 Highway 36
Hazlet NJ 07730

Telephone : (732) 264-4500

Telefax : (732) 335-2551

E-mail address : sds@iff.com

Emergency telephone number : +1 800 424 9300

This telephone number is available 24 hours per day, 7 days per week.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Hazards for the product as supplied

Flammable liquids : Category 4

Skin sensitisation : Sub-category 1B

Other hazards

None known.

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : H227 Combustible liquid.
H317 May cause an allergic skin reaction.

Precautionary statements :

Prevention:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261 Avoid breathing mist or vapours.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of water.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

Substance name : KOAVONE
CAS-No. : 81786-73-4

Components

Chemical name	CAS No./Unique ID	Concentration (% w/w)	Trade secret
3,4,5,6,6-pentamethylhept-3-en-2-one	81786-73-4*	>= 80 - <= 100	TSC

* Indicates that the identifier is a CAS No.
TSC- the actual concentration or concentration range is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

General advice : Take Hazard and Precautionary phrases (section 2) into account.

If inhaled : Remove from exposure site to fresh air and keep at rest. Obtain medical advice.

In case of skin contact : Remove contaminated clothes. Wash thoroughly with water (and soap). Contact physician if symptoms persist.

In case of eye contact : Flush immediately with water for at least 15 minutes. Contact physician if symptoms persist.

If swallowed : Rinse mouth with water and obtain medical advice.

Most important symptoms : May cause an allergic skin reaction.

and effects, both acute and delayed

Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.
Notes to physician

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Carbondioxide, dry chemical, foam.

Unsuitable extinguishing media : Do not use a direct waterjet on burning material.

Specific hazards during fire-fighting : Water may be ineffective.

Further information : Standard procedure for chemical fires.

Special protective equipment for firefighters : Wear NIOSH approved self-contained breathing apparatus and full protective clothing when fighting fires involving chemicals. Use water spray to cool containers exposed to fire.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Avoid inhalation and contact with skin and eyes. A self-contained breathing apparatus is recommended in case of a major spill.

Environmental precautions : Keep away from drains, surface- and groundwater and soil.

Methods and materials for containment and cleaning up : Clean up spillage promptly. Remove ignition sources. Provide adequate ventilation. Avoid excessive inhalation of vapours. Gross spillages should be contained by use of sand or inert powder and disposed of according to the local regulations.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Keep away from ignition sources and naked flame.

Advice on safe handling : Avoid excessive inhalation of concentrated vapors. Follow good manufacturing practices for housekeeping and personal hygiene. Wash any exposed skin immediately after any

chemical contact, before breaks and meals, and at the end of each work period. Contaminated clothing and shoes should be thoroughly cleaned before re-use.

If appropriate, procedures used during the handling of this material should also be used when cleaning equipment or removing residual chemicals from tanks or other containers, especially when steam or hot water is used, as this may increase vapor concentrations in the workplace air. Where chemicals are openly handled, access should be restricted to properly trained employees.
Keep all heated processes at the lowest necessary temperature in order to minimize emissions of volatile chemicals into the air.

Conditions for safe storage : Store in a cool, dry, ventilated area away from heat sources. Keep containers upright and tightly closed when not in use.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Engineering measures : Where feasible, isolate mixing rooms and other areas where this material is used or openly handled. Maintain these areas under negative air pressure relative to the rest of the plant. Where feasible, use closed systems to transfer and process this material

Personal protective equipment

Respiratory protection : Use local exhaust ventilation around open tanks and other open sources of potential exposures in order to avoid excessive inhalation, including places where this material is openly weighed or measured. In addition, use general dilution ventilation of the work area to eliminate or reduce possible worker exposures.
No respiratory protection is required during normal operations in a workplace where engineering controls such as adequate ventilation, etc. are sufficient.

If engineering controls and safe work practices are not sufficient, an approved, properly fitted respirator with organic vapor cartridges or canisters and particulate filters should be used:

a)while engineering controls and appropriate safe work practices and/or procedures are being implemented; or
b)during short term maintenance procedures when engineering controls are not in normal operation or are not sufficient; or
c)if normal operational workplace vapor concentration in the

air is increased due to heat ;
d)during emergencies; or
e)if engineering controls and operational practices are not sufficient to reduce airborne concentrations below an established occupational exposure limit.

Hand protection

Remarks	:	Avoid skin contact. Use chemically resistant gloves.
Eye protection	:	Use tight-fitting goggles, face shield or safety glasses with side shields if eye contact might occur.
Skin and body protection	:	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Protective measures	:	In December 2003, the National Institute for Occupational Safety and Health ("NIOSH") published an Alert on preventing lung disease in workers who use or make flavorings [NIOSH Publication Number 2004-110]. In August 2004, the United States Flavor and Extract Manufacturers Association (FEMA) issued a report entitled "Respiratory Safety in the Flavor Manufacturing Workplace". Both of these reports provide recommendations for reducing employee exposure and for medical surveillance in the workplace. The recommendations in these reports are generally applicable to the use of any chemical in the workplace and you are strongly urged to review both of these reports. The report published by FEMA also contains a list of "high priority" chemicals. If any of these chemicals are present in this product at a concentration >= 1.0% due to an intentional addition by IFF, the chemical(s) will be identified in this safety data sheet.
Hygiene measures	:	To the extent deemed appropriate, implement pre-placement and regularly scheduled ascertainment of symptoms and spirometry testing of lung function for workers who are regularly exposed to this material. To the extent deemed appropriate, use an experienced air sampling expert to identify and measure volatile chemicals that could be present in the workplace air to determine potential exposures and to ensure the continuing effectiveness of engineering controls and operational practices to minimize exposure.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Colour	:	colorless to pale yellow

Odour	:	conforms to standard
Melting point/ range	:	-13 °F / -25 °C (1,013 hPa) Method: OECD Test Guideline 102
Boiling point	:	392 °F / 200 °C (1,013 hPa) Method: OECD Test Guideline 103 GLP: yes
Flash point	:	187 °F / 86 °C Method: closed cup
Evaporation rate	:	not determined
Flammability (solid, gas)	:	The product is not flammable.
Self-ignition	:	586 °F / 308 °C 1,013 hPa Method: Tested according to Annex V of Directive 67/548/EEC.
Upper explosion limit / Upper flammability limit	:	not determined
Lower explosion limit / Lower flammability limit	:	not determined
Vapour pressure	:	0.01 hPa (68 °F / 20 °C) Calculated
Relative vapour density	:	not determined
Relative density	:	0.8650 - 0.8690
Density	:	not determined
Solubility(ies)		
Water solubility	:	0.042 g/l (68 °F / 20 °C) Method: OECD Test Guideline 105 GLP: yes
Solubility in other solvents	:	not determined
Partition coefficient: n-octanol/water	:	log Pow: 4.44 (77 °F / 25 °C) Method: OECD Test Guideline 117 GLP: yes

Auto-ignition temperature	:	not determined
Decomposition temperature	:	not determined
pH	:	not determined
Viscosity		
Viscosity, dynamic	:	3.26 mPa.s (68 °F / 20 °C) Method: OECD 114
Viscosity, kinematic	:	not determined
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Surface tension	:	57.5 mN/m, 68 °F / 20 °C, OECD 115
Molecular weight	:	not determined
Assessment	:	not determined
Particle size	:	not determined
Particle Size Distribution	:	not determined
Specific surface area	:	not determined
Surface charge/Zeta potential	:	not determined
Shape	:	not determined
Crystallinity	:	not determined
Surface treatment /Coatings	:	not determined

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No hazards to be specially mentioned.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Presents no significant reactivity hazard, by itself or in contact with water.
Conditions to avoid	:	Direct sources of heat.
Incompatible materials	:	Avoid contact with strong acids, alkali or oxidizing agents.
Hazardous decomposition products	:	Carbon monoxide and unidentified organic compounds may be formed during combustion.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

Components:

Reaction mass of (E)-3,4,5,6,6-pentamethylhept-3-en-2-one and 3,5,6,6-tetramethyl-4-methyleneheptan-2-one.:

Acute oral toxicity	:	Acute toxicity estimate: 2,500 mg/kg
Acute dermal toxicity	:	LD50 (Rabbit, male and female): > 5,000 mg/kg Method: OECD Test Guideline 402 Symptoms: No adverse effects GLP: no Remarks: REACH data

Skin corrosion/irritation

Not classified based on available information.

Components:

Reaction mass of (E)-3,4,5,6,6-pentamethylhept-3-en-2-one and 3,5,6,6-tetramethyl-4-methyleneheptan-2-one.:

Species	:	reconstructed human epidermis (RhE)
Exposure time	:	42 h
Assessment	:	No skin irritation
Method	:	OECD Test Guideline 439
Result	:	No skin irritation
GLP	:	yes
Test substance	:	(undiluted)
Remarks	:	REACH data

Serious eye damage/eye irritation

Not classified based on available information.

Components:

Reaction mass of (E)-3,4,5,6,6-pentamethylhept-3-en-2-one and 3,5,6,6-tetramethyl-4-methyleneheptan-2-one.:

Species	:	Chicken eye
Result	:	No eye irritation
Exposure time	:	4 h
Assessment	:	No eye irritation
Method	:	OECD Test Guideline 438
GLP	:	yes
Test substance	:	(undiluted)
Remarks	:	REACH data

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified based on available information.

Product:

Assessment	:	The product is a skin sensitiser, sub-category 1B.
Result	:	The product is a skin sensitiser, sub-category 1B.

Components:

Reaction mass of (E)-3,4,5,6,6-pentamethylhept-3-en-2-one and 3,5,6,6-tetramethyl-4-methyleneheptan-2-one.:

Test Type	:	LLNA
Species	:	Mouse
Assessment	:	The product is a skin sensitiser, sub-category 1B.
Method	:	OECD Test Guideline 429
Result	:	Causes sensitisation.
GLP	:	yes
Test substance	:	(undiluted)
Remarks	:	REACH data

Germ cell mutagenicity

Not classified based on available information.

Components:

Reaction mass of (E)-3,4,5,6,6-pentamethylhept-3-en-2-one and 3,5,6,6-tetramethyl-4-methyleneheptan-2-one.:

Genotoxicity in vitro : Test Type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: yes
Remarks: REACH data

Test Type: In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative
GLP: yes
Remarks: REACH data

Test Type: Micronucleus test
Test system: Human lymphocytes
Method: OECD Test Guideline 487
Result: negative
GLP: yes

Remarks: REACH data

Carcinogenicity

Not classified based on available information.

Components:

Reaction mass of (E)-3,4,5,6,6-pentamethylhept-3-en-2-one and 3,5,6,6-tetramethyl-4-methyleneheptan-2-one.:

Carcinogenicity - Assessment : not required

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

Components:

Reaction mass of (E)-3,4,5,6,6-pentamethylhept-3-en-2-one and 3,5,6,6-tetramethyl-4-methyleneheptan-2-one.:

Effects on fertility : Test Type: reproductive and developmental toxicity study
Species: Rat, male and female
Strain: wistar
Application Route: Oral
General Toxicity - Parent: NOAEL: 750 mg/kg food
Fertility: NOAEL: 2,500 mg/kg food
Method: OECD Test Guideline 422
GLP: yes
Remarks: REACH data

Effects on foetal development : Test Type: reproductive and developmental toxicity study
Species: Rat, female
Strain: wistar
Application Route: Oral
General Toxicity Maternal: NOAEL: 37 mg/kg body weight
Developmental Toxicity: NOAEL: 129 mg/kg body weight
Method: OECD Test Guideline 422
GLP: yes
Remarks: REACH data

Reproductive toxicity - Assessment : not required

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Repeated dose toxicity

Components:

Reaction mass of (E)-3,4,5,6,6-pentamethylhept-3-en-2-one and 3,5,6,6-tetramethyl-4-methyleneheptan-2-one.:

Species	:	Rat, male
NOAEL	:	42 mg/kg
Application Route	:	Oral
Exposure time	:	90-day
Number of exposures	:	1x /day
Method	:	OECD Test Guideline 422
GLP	:	yes
Symptoms	:	Changes in the blood count
Remarks	:	REACH data

Species	:	Rat, female
NOAEL	:	41 mg/kg
Application Route	:	Oral
Exposure time	:	90-day
Number of exposures	:	1x /day
Method	:	OECD Test Guideline 422
GLP	:	yes
Symptoms	:	Changes in the blood count
Remarks	:	REACH data

Aspiration toxicity

Not classified based on available information.

SECTION 12. ECOLOGICAL INFORMATION

Ecological information

Additional ecological information	:	Avoid contamination of soil, ground and surface water.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	Dispose of according to local regulations. Avoid disposing into drainage systems and into the environment.
Contaminated packaging	:	Place material into sealed containers and dispose of in accordance with local, state and federal regulations.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No.	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., Environmentally hazardous substance, liquid, n.o.s. (3,4,5,6,6-pentamethylhept-3-en-2-one)
Class	:	9
Packing group	:	III
Labels	:	9
Packing instruction (cargo aircraft)	:	964
Packing instruction (passenger aircraft)	:	964
Environmentally hazardous	:	yes

IMDG-Code

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (3,4,5,6,6-pentamethylhept-3-en-2-one)
Class	:	9
Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Marine pollutant	:	yes

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

Not applicable for product as supplied.

National Regulations

49 CFR

UN/ID/NA number	:	NA 1993
Proper shipping name	:	Combustible liquid, n.o.s. (3,4,5,6,6-pentamethylhept-3-en-2-one)
Class	:	CBL
Packing group	:	III
Labels	:	NONE
ERG Code	:	128
Marine pollutant	:	no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)
Respiratory or skin sensitisation

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

The components of this product are reported in the following inventories:

US TSCA : All substances listed as active on the TSCA inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonised System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Admin-

istration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organisation for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Revision Date : 12/23/2025

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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