Qualikems Lifesciences Pvt. Ltd.

(Formerly known as Qualikems fine chem Pvt Ltd)
Works & HO : Plot No. 68-69,G.I.D.C Industrial Estate,Nandesari,Vadodara-391340 (Gujarat)
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SECTION1:Identificationofthesubstance/mixtureandofthecompany/undertaking

Productidentifiers

Productname :**Cyclohexanone**

CAS-No. :**108-94-1**

Relevantidentifiedusesofthesubstanceormixtureandusesadvisedagainst

Identifieduses :Laboratorychemicals,Manufactureofsubstances

Detailsofthesupplierofthesafetydatasheet

Company : Qualikems Lifesciences Pvt Ltd

Works : Plot No.
68.69,G.I.D.C Industrial
Estate, Nandesari,
Vadodara-391340 (Gujarat)

Emergency telephone number

Emergency Phone # : +91-265-2841531 (9:00am - 6:30 pm) [Office hours]

SECTION2:Hazardsidentification

Classificationofthesubstanceormixture

ClassificationaccordingtoRegulation(EC)No1272/2008
Flammable liquids (Category 3), H226
Acutetoxicity,Oral(Category4),H302
Acutetoxicity,Inhalation(Category4),H332
Acute toxicity, Dermal (Category 4), H312
Skin irritation (Category 2), H315
Seriouseyedamage(Category1), H318
Specifictargetorgantoxicity-singleexposure(Category3),Respiratorysystem,H335 For the full text of the H-Statements mentioned in this Section, see Section 16.

Labelelements

LabellingaccordingRegulation(EC)No1272/2008

Pictogram

Signal Word	Danger
Hazard statement(s)	
H226	Flammableliquidandvapor.
H302 + H312 + H332	Harmfulifswallowed,incontactwithskinorifinhaled. H315 Causes skin irritation.
H318	Causesseriouseyedamage.
H335	Maycauserespiratoryirritation.
Precautionarystatement(s)	
P210	Keepawayfromheat,hotsurfaces,sparks,openflamesand other ignition sources. No smoking.
P280	Wearprotectivegloves/protectiveclothing/eye protection/face protection.
P301+ P312	IFSWALLOWED:CallaPOISONCENTER/doctorifyoufeel unwell.
P303 + P361 + P353	IFONSKIN(orhair):Takeoffimmediatelyallcontaminated clothing. Rinse skin with water.
P304+P340+P312	IFINHALED:Removepersontofreshairandkeepcomfortable forbreathing.CallaPOISONCENTER/doctorifyoufeelunwell.
P305+P351+P338	IFINEYES:Rinsecautiouslywithwaterforseveralminutes. Removecontactlenses,ifpresentandeasytodo.Continue rinsing.
SupplementalHazard Statements	none

ReducedLabeling(<=125ml)

Pictogram

Signal Word	Danger
Hazard statement(s)	
H318	Causesseriouseyedamage.
Precautionarystatement(s)	
P305+P351+P338	IFINEYES:Rinsecautiouslywithwaterforseveralminutes. Removecontactlenses,ifpresentandeasytodo.Continue rinsing.
SupplementalHazard Statements	none

Otherhazards

This substance/mixture contains no components considered to be either persistent, bioaccumulativeandtoxic(PBT),orverypersistentandverybioaccumulative(vPvB)at levels of 0.1% or higher.

Ecologicalinformation:
The substance/mixture does not contain components considered to have endocrine disruptingpropertiesaccordingtoREACHArticle57(f)orCommissionDelegatedregulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicologicalinformation:
The substance/mixture does not contain components considered to have endocrine disruptingpropertiesaccordingtoREACHArticle57(f)orCommissionDelegatedregulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION3:Composition/informationoningredients

Substances

Formula :$C_6H_{10}O$
Molecularweight :98,14g/mol
CAS-No. :108-94-1
EC-No. :203-631-1
Index-No. :606-010-00-7

Component		Classification	Concentration
Cyclohexanone			
CAS-No. EC-No. Index-No.	108-94-1 203-631-1 606-010-00-7	Flam.Liq.3;AcuteTox.4; SkinIrrit.2;EyeDam.1; STOTSE3;H226,H302, H332,H312,H315,H318, H335	<=100%

ForthefulltextoftheH-StatementsmentionedinthisSection,seeSection 16.

SECTION4:Firstaidmeasures

Descriptionoffirst-aidmeasures

General advice
Showthismaterialsafetydatasheettothedoctorinattendance.

Ifinhaled
Afterinhalation:freshair.

Incaseofskincontact
Incaseofskincontact:Takeoffimmediatelyallcontaminatedclothing.Rinseskinwith water/ shower. Consult a physician.

Incaseofeyecontact
Aftereyecontact:rinseoutwithplentyofwater.Immediatelycallinophthalmologist. Remove contact lenses.

Ifswallowed
Afterswallowing:immediatelymakevictimdrinkwater(twoglassesatmost).Consulta physician.

Mostimportantsymptomsandeffects,bothacuteanddelayed

Themostimportantknownsymptomsandeffectsaredescribedinthelabelling(seesection 2.2) and/or in section 11

Indicationofanyimmediatemedicalattentionandspecialtreatmentneeded

Nodataavailable

SECTION5:Firefightingmeasures

Extinguishing

mediaSuitableextinguishing

media

Carbondioxide(CO2)FoamDrypowder

Unsuitableextinguishingmedia

Forthissubstance/mixturenolimitationsofextinguishingagentsaregiven.

Specialhazardsarisingfromthesubstanceormixture

Carbonoxides
Combustible.
Vapors are heavier than air and may spread along floors.
Formsexplosivemixtureswithairatelevatedtemperatures.
Developmentofhazardouscombustiongasesorvapourspossibleintheeventoffire.

Adviceforfirefighters

Stayindangerareaonlywithself-containedbreathingapparatus.Preventskincontactby keeping a safe distance or by wearing suitable protective clothing.

Furtherinformation

Removecontainerfromdangerzoneandcoolwithwater.Preventfireextinguishingwater from contaminating surface water or the ground water system.

SECTION6:Accidentalreleasemeasures

Personalprecautions,protectiveequipmentandemergencyprocedures

Advicefornon-emergencypersonnel:Donotbreathevapors,aerosols.Avoidsubstance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuatethedangerarea,observeemergencyprocedures,consultanexpert. For personal protection see section 8.

Environmentalprecautions

Donotletproductenterdrains.Riskofexplosion.

Methodsandmaterialsforcontainmentandcleaningup

Coverdrains.Collect,bind,andpumpoffspills.Observepossiblematerialrestrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

Referencetoothersections

Fordisposalseesection13.

SECTION7:Handlingandstorage

Precautionsforsafehandling

Advice on safe handling
Workunderhood.Donotinhalesubstance/mixture.Avoidgenerationofvapours/aerosols.

Adviceonprotectionagainstfireandexplosion
Keepawayfromopenflames,hotsurfacesandsourcesofignition.Takeprecautionary measures against static discharge.

Hygienemeasures
Immediatelychangecontaminatedclothing.Applypreventiveskinprotection.Washhands and face after working with substance.
Forprecautionsseesection2.2.

Conditionsforsafestorage,includinganyincompatibilities

Storage conditions
Keepcontainertightlyclosedinadryandwell-ventilatedplace.Keepawayfromheatand sourcesofignition.

Storageclass
Storageclass(TRGS510):3:Flammableliquids

Specificenduse(s)

Apartfromtheusesmentionedinsection1.2nootherspecificusesarestipulated

SECTION8:Exposurecontrols/personalprotection

Controlparameters

Ingredientswithworkplacecontrolparameters Derived

No Effect Level (DNEL)

ApplicationArea	Routesof exposure	Healtheffect	Value
WorkerDNEL, acute	dermal	Systemiceffects	
WorkerDNEL, acute	inhalation	Systemiceffects	100mg/m3
WorkerDNEL, acute	inhalation	Localeffects	100mg/m3
WorkerDNEL, longterm	dermal	Systemiceffects	
WorkerDNEL, longterm	inhalation	Systemiceffects	100mg/m3
WorkerDNEL, longterm	inhalation	Localeffects	80mg/m3
ConsumerDNEL, acute	dermal	Systemiceffects	
ConsumerDNEL, acute	inhalation	Systemiceffects	50mg/m3
ConsumerDNEL, acute	oral	Systemiceffects	

ConsumerDNEL, acute	inhalation	Localeffects	50mg/m3
ConsumerDNEL, longterm	dermal	Systemiceffects	
ConsumerDNEL, longterm	inhalation	Systemiceffects	20mg/m3
ConsumerDNEL, longterm	oral	Systemiceffects	
ConsumerDNEL, longterm	inhalation	Localeffects	20mg/m3

PredictedNoEffectConcentration(PNEC)

Compartment	Value
Freshwater	0,0329mg/l
Seawater	0,00329mg/l
Aquaticintermittentrelease	0,329mg/l
Freshwatersediment	0,0951mg/kg
Soil	0,0143mg/kg
Sewagetreatmentplant	10mg/l

Exposurecontrols

Personalprotectiveequipment

Eye/faceprotection
Use equipment for eye protection tested and approved under appropriate governmentstandardssuchasNIOSH(US)orEN166(EU).Tightlyfittingsafety goggles

Skinprotection
This recommendation applies only to the product stated in the safety data sheet, suppliedbyusandforthedesignateduse.Whendissolvinginormixingwithother substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).
Fullcontact
Material:butyl-rubber
Minimum layer thickness: 0,7 mm
Break through time: 480 min
Materialtested:Butoject®(KCL898)

This recommendation applies only to the product stated in the safety data sheet, suppliedbyusandforthedesignateduse.Whendissolvinginormixingwithother substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).
Splash contact
Material:Viton®
Minimumlayerthickness:0,7mm
Break through time: 120 min
Materialtested:Vitoject®(KCL890/AldrichZ677698,SizeM)

BodyProtection
Flameretardantantistaticprotectiveclothing.

Respiratoryprotection
RecommendedFiltertype: FilterA(acc.toDIN3181)forvapoursoforganic compounds

Theentrepeneurhastoensurethatmaintenance,cleaningandtestingofrespiratory protective devices are carried out according to the instructions of the producer. Thesemeasureshavetobeproperlydocumented.

Controlofenvironmentalexposure
Donotletproductenterdrains.Riskofexplosion.

SECTION9:Physicalandchemicalproperties

Informationonbasicphysicalandchemicalproperties

a)	Physicalstate	clear,liquid
b)	Color	colorless,to,lightyellow
c)	Odor	stinging
d)	Melting point/freezingpoint	Meltingpoint/range:-47°C-lit. 155
e)	Initialboilingpoint and boiling range	°C - lit.
f)	Flammability(solid, gas)	Nodataavailable
g)	Upper/lower flammabilityor explosivelimits	Upperexplosionlimit:9,4%(V) Lowerexplosionlimit:1,1%(V)
h)	Flashpoint	44°C-closedcup
i)	Autoignition temperature	420 °C at1.013 hPa
j)	Decomposition temperature	Nodataavailable
k)	pH	ca.7at70 g/lat20°C
l)	Viscosity	Viscosity, kinematic: No data available Viscosity,dynamic:2,2mPa.sat25°C
m)	Watersolubility	86g/lat20°C
n)	Partitioncoefficient: n-octanol/water	logPow:0,86at25°C -Bioaccumulationisnotexpected.
o)	Vaporpressure	ca.7hPaat30°C
p)	Density	0,947g/cm3at25°C-lit.
	Relative density	No data available

q)	Relativevapor density	Nodataavailable
r)	Particle characteristics	Nodataavailable
s)	Explosiveproperties	Nodataavailable
t)	Oxidizingproperties	none

Othersafetyinformation

Surfacetension	35,05mN/mat20°C
Relativevapor density	3,39-(Air= 1.0)

SECTION10:Stabilityandreactivity

Reactivity

Vapor/air-mixturesareexplosiveatintensewarming.

Chemicalstability

Theproductischemicallystableunderstandardambientconditions(roomtemperature).

Possibilityofhazardousreactions

Riskofexplosionwith:
Nitric acid
hydrogenperoxide
Oxidizing agents
mineral acids

Conditionstoavoid

Heating.

Incompatiblematerials

Nodataavailable

Hazardousdecompositionproducts

Intheeventoffire:seesection5

SECTION11:Toxicologicalinformation

Informationontoxicologicaleffects

Acute toxicity

LD50Oral -Rat-male-1.620mg/kg
Remarks:(ECHA)
Symptoms:Stomach/intestinaldisorders,Riskofaspirationuponvomiting.,Aspirationmay cause pulmonary edema and pneumonitis.

AcutetoxicityestimateOral-1.620mg/kg
(ATEvaluederivedfromLD50/LC50value)
LC50Inhalation-Rat-maleandfemale-4h->6,2mg/l-vapor

Remarks:(ECHA)
Symptoms:Inhighdoses:,Irritationsymptomsintherespiratorytract. LD50
Dermal - Rabbit - 1.100 mg/kg
Remarks:(ExternalMSDS)
AcutetoxicityestimateDermal-1.100mg/kg
(ATE value derived from LD50/LC50 value)

Skincorrosion/irritation
Skin-Rabbit
Result:Irritatingtoskin.-4h (OECD
Test Guideline 404)
Remarks:Repeatedorprolongedexposuremaycauseskinirritationanddermatitis,dueto degreasing properties of the product.

Seriouseyedamage/eyeirritation
Eyes-Invitrostudy
Result:Irreversibleeffectsontheeye
Remarks: (ECHA)
Remarks:Riskofcornealclouding.

Respiratoryorskinsensitization
Maximization Test - Guinea pig
Result: negative
Remarks:(ECHA)

Germcellmutagenicity
TestType:Invitromammaliancellgenemutationtest Test
system:Chinese hamster ovary cells
Metabolicactivation:withandwithoutmetabolicactivation Method:
OECD Test Guideline 476
Result:negative
TestType:Amestest
Test system:Escherichia coli/Salmonella typhimurium
Metabolicactivation:withandwithoutmetabolicactivation
Method: OECD Test Guideline 471
Result:negative
TestType:unscheduledDNAsynthesisassay
Test system:human diploid fibroblasts
Metabolicactivation:withandwithoutmetabolicactivation Method:
OECD Test Guideline 482
Result:negative

TestType:Micronucleustest Species:
Mouse
Celltype:Bonemarrow
Application Route: Oral
Method:OECDTestGuideline474
Result: negative

Carcinogenicity

Nodataavailable

Reproductivetoxicity
Nodataavailable

Specifictargetorgantoxicity-singleexposure
Inhalation-Maycauserespiratoryirritation.-RespiratoryTract

Specifictargetorgantoxicity-repeatedexposure
Nodataavailable

Aspirationhazard
Nodataavailable

AdditionalInformation

Endocrinedisruptingproperties

Product:

Assessment	The substance/mixture does not contain components considered to have endocrine disruptingpropertiesaccordingtoREACHArticle 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Repeateddosetoxicity -Rat-maleandfemale-Oral -3Months-NOAEL(Noobserved adverse effect level) - 143 mg/kg

RTECS:GW1050000
Prolongedorrepeatedexposuretoskincausesdefattinganddermatitis.,Cough,Shortness of breath, Headache, Nausea, Vomiting, Incoordination., Inhalation of high concentrations may cause:, Central nervous system depression, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Systemiceffects:

Afterabsorptionoflargequantities:

Headache
Salivation
Nausea
Vomiting
Dizziness
narcosis
Coma

The following applies to ketones in general: when vapours/aerosols occur, mucosal irritations, coughing, and dyspnoea after inhalation. The absorption of large quantities leadsto:CNSdepression(narcosis).Repeatedskincontactleadstoadegreasingeffect, with secondary inflammation possible. Toxic effects on the liver and kidneys cannot be excluded after high doses. The inhalation of droplets may result in the formation of oedemas in the respiratory tract.

Otherdangerouspropertiescannotbeexcluded.

Handleinaccordancewithgoodindustrialhygieneandsafetypractice.

SECTION12:Ecologicalinformation

Toxicity

Toxicity to fish	flow-throughtestLC50-Pimephalespromelas(fatheadminnow)- 527 - 732 mg/l- 96 h (OECDTestGuideline203)
Toxicitytobacteria	

Persistenceanddegradability

Biodegradability	aerobic-Exposuretime28d Result:90-100%-Readilybiodegradable. (OECD Test Guideline 301F)

Bioaccumulativepotential

Nodataavailable

Mobilityinsoil

Nodataavailable

ResultsofPBTandvPvBassessment

This substance/mixture contains no components considered to be either persistent, bioaccumulativeandtoxic(PBT),orverypersistentandverybioaccumulative(vPvB)at levels of 0.1% or higher.

Endocrinedisruptingproperties

Product:

Assessment :Thesubstance/mixturedoesnotcontaincomponents considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation(EU)2018/605atlevelsof0.1%orhigher.

Otheradverseeffects

Nodataavailable

SECTION13:Disposalconsiderations

Wastetreatmentmethods

Nodataavailable

SECTION14:Transportinformation

UNnumber

ADR/RID:1915 IMDG:1915 IATA:1915

UN proper shipping name

ADR/RID: CYCLOHEXANONE
IMDG: CYCLOHEXANONE
IATA: Cyclohexanone

Transporthazardclass(es)

ADR/RID:3 IMDG: 3 IATA:3

Packaginggroup

ADR/RID:III IMDG:III IATA: III

Environmentalhazards

ADR/RID:no IMDGMarinepollutant:no IATA:no

Specialprecautionsforuser

Tunnelrestrictioncode :(D/E)

Furtherinformation :Nodataavailable

SECTION15:Regulatoryinformation

Safety,healthandenvironmentalregulations/legislationspecificfor the substance or mixture

ThismaterialsafetydatasheetcomplieswiththerequirementsofRegulation(EC)No. 1907/2006.

Nationallegislation

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council onthecontrolofmajor-accidenthazards involving dangerous substances.	P5c	FLAMMABLELIQUIDS

Otherregulations

ObserveworkrestrictionsregardingmaternityprotectioninaccordancetoDir92/85/EECor stricter national regulations where applicable.

TakenoteofDir94/33/EContheprotectionofyoungpeopleatwork.

ChemicalSafetyAssessment

AChemicalSafetyAssessmenthasbeencarriedoutforthissubstance.

SECTION16:Otherinformation

FulltextofH-Statementsreferredtoundersections2and3.

H226	Flammableliquidandvapor.
H302	Harmfulifswallowed.
H302+H312+ H332	Harmfulifswallowed,incontactwithskinorifinhaled.
H312	Harmfulincontactwithskin.
H315	Flammableliquidandvapor.
H318	Harmfulifswallowed,incontactwithskinorifinhaled. H332 Causes skin irritation.
H335	Causesseriouseyedamage.

Fulltextofotherabbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; 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; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; 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 MaritimeDangerousGoods;IMO-InternationalMaritimeOrganization;ISHL-Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; 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; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization 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; REACH - Regulation (EC) No 1907/2006 of the European Parliament and oftheCouncil concerning theRegistration,Evaluation,Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN -UnitedNations;UNRTDG-UnitedNationsRecommendationsontheTransportof Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Furtherinformation

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Qualikems Lifesciences Pvt. Ltd and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.qualikems.com for additional terms and conditions of sale