SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACh) Article 31, Annex II as amended

Isopropylamine
10350

Version / Revision	6	**Revision Date**	27-Oct-2022
Supersedes Version	5.02	**Issuing date**	27-Oct-2022

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

1.1. Product identifier

Identification of the substance/preparation **Isopropylamine**

CAS-No 75-31-0
EC No. 200-860-9
Registration number (REACh) 01-2119463274-39

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

Identified uses Formulation
Uses advised against None

1.3. Details of the supplier of the safety data sheet

Company/Undertaking Identification
OQ Chemicals GmbH
Rheinpromenade 4A
D-40789 Monheim
Germany

Product Information
Product Stewardship
FAX: +49 (0)208 693 2053
email: sc.psq@oq.com

1.4. Emergency telephone number

Emergency telephone number +44 (0) 1235 239 670 (UK)
available 24/7

National emergency telephone number
National Poisons Information Centre
+353 (0)1 809 2166
available to the public 8 am - 10 pm
+353 (0)1 809 2566
available 24/7 for medical professionals

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

This substance is classified based on Directive 1272/2008/EC and its amendments (CLP Regulation)

Flammable liquid Category 1, H224
Acute oral toxicity Category 3, H301
Acute dermal toxicity Category 3, H311
Acute inhalation toxicity Category 3, H331
Skin corrosion/irritation Category 2, H315
Serious eye damage/eye irritation Category 2, H319
Target Organ Systemic Toxicant - Single exposure Category 3, H335

In addition to the CLP classification based on OQ data this product should also be regarded as:
Skin corrosion/irritation: category 1A-1C

Additional information
For full text of Hazard- and EU Hazard-statements see SECTION 16.

2.2. Label elements

Labelling according to Regulation 1272/2008/EC and its amendments (CLP Regulation).

Hazard pictograms

Signal word	**Danger**
Hazard statements	H224: Extremely flammable liquid and vapour. H301: Toxic if swallowed. H311: Toxic in contact with skin. H331: Toxic if inhaled. H315: Causes skin irritation. H319: Causes serious eye irritation. H335: May cause respiratory irritation.
Precautionary statements	P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P233: Keep container tightly closed. P280: Wear protective gloves/protective clothing/eye protection/face protection. P301 + P330: IF SWALLOWED: Rinse mouth P321: Specific treatment: IF ON SKIN: Wash off with 3% acetic acid followed by large amounts of plain water for at least 5 min as a final step. P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310: Immediately call a POISON CENTER/doctor. P403 + P235: Store in a well ventilated place. Keep cool.

2.3. Other hazards

Vapours may form explosive mixture with air
Vapour is heavier than air and can travel considerable distance to a source of ignition and flashback
Components of the product may be absorbed into the body by inhalation, ingestion and through the skin

PBT and vPvB assessment	This substance is not considered to be persistent, bioaccumulating nor toxic (PBT), nor very persistent nor very bioaccumulating (vPvB)
Endocrine disrupting assessments	The substance is not listed on the candidate list according to Art. 59(1), REACh. The substance was not assessed as having endocrine disrupting properties according to regulation 2017/2100/EU or 2018/605/EU.

SECTION 3: Composition / information on ingredients

3.1. Substances

Component	CAS-No	REACh-No	1272/2008/EC	Concentration (%)
Isopropylamine	75-31-0	01-2119463274-39	Flam. Liq. 1; H224 Acute Tox. 3; H301 Acute Tox. 3; H311 Acute Tox. 3, H331 Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335 ATE = 173 mg/kg (oral) ATE = 400 mg/kg (dermal) ATE = 8,7 mg/L*** (inhalation) (vapours)***	> 99,7

For full text of Hazard- and EU Hazard-statements see SECTION 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation
Keep at rest. Aerate with fresh air. Call a physician immediately. Symptoms of poisoning may develop many hours after exposure.

Skin
Wash off with 3% acetic acid followed by large amounts of plain water for at least 5 min as a final step. Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.

Eyes
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. Immediate medical attention is required.

Ingestion
Call a physician immediately. Do not induce vomiting without medical advice.

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

Main symptoms
shortness of breath, convulsions, cough, hypertensive effect, narcosis, unconsciousness, discomfort, nausea.

Special hazard
Stomach perforation, Lung oedema, Pneumonia, Dermatitis.

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

General advice
Remove contaminated, soaked clothing immediately and dispose of safely. First aider needs to protect himself.

Treat as an alkaline substance (similar to ammonia). If ingested, irrigate the stomach. Treat skin and mucous

membranes with antihistamine and corticoids. In case of lung irritation, first treatment with cortisone spray. Symptoms may be delayed. Later control for pneumonia and lung oedema.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media
alcohol-resistant foam, dry chemical, carbon dioxide (CO2), water spray

Unsuitable Extinguishing Media
Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Under conditions giving incomplete combustion, hazardous gases produced may consist of:
carbon monoxide (CO)
carbon dioxide (CO2)
nitrogen oxides (NOx)
hydrogen cyanide (hydrocyanic acid)
Combustion gases of organic materials must in principle be graded as inhalation poisons
Vapour is heavier than air and can travel considerable distance to a source of ignition and flashback
Vapours may form explosive mixture with air

5.3. Advice for firefighters

Special protective equipment for firefighters
Fire fighter protection should include a self-contained breathing apparatus (NIOSH-approved or EN 133) and full fire-fighting turn out gear.

Precautions for firefighting
Cool containers / tanks with water spray. Water run-off and vapor cloud may be corrosive. Dike and collect water used to fight fire. Keep people away from and upwind of fire.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: For personal protective equipment see section 8. Avoid contact with skin and eyes. Avoid breathing vapors or mists. Keep people away from and upwind of spill/leak. Ensure adequate ventilation, especially in confined areas. Keep away from heat and sources of ignition.
For emergency responders: Personal protection see section 8.

6.2. Environmental precautions

Prevent further leakage or spillage. Do not discharge product into the aquatic environment without pretreatment (biological treatment plant).

6.3. Methods and material for containment and cleaning up

Methods for containment
Stop the flow of material, if possible without risk. Dike spilled material, where this is possible.

Methods for cleaning up
Soak up with inert absorbent material. DO NOT use combustible materials such as sawdust. Keep in suitable,

closed containers for disposal. If liquid has been spilt in large quantities clean up promptly by scoop or vacuum. Dispose of in accordance with local regulations. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours).

6.4. Reference to other sections

For personal protective equipment see section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Further info may be available in the appropriate Exposure scenarios in the annex to this SDS.

Advice on safe handling
Do not breathe vapours or spray mist. Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Do not use compressed air for filling, discharging or handling. Refill and handle product only in closed system. Provide sufficient air exchange and/or exhaust in work rooms.

Hygiene measures
When using, do not eat, drink or smoke. Take off all contaminated clothing immediately. Wash hands before breaks and immediately after handling the product.

Advice on the protection of the environment
See Section 8: Environmental exposure controls.

Incompatible products
acids
Halogenated hydrocarbon
strong oxidizing agents
acid anhydrides
acid chlorides

7.2. Conditions for safe storage, including any incompatibilities

Advice on protection against fire and explosion
Keep away from sources of ignition - No smoking. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). In case of fire, emergency cooling with water spray should be available. Ground and bond containers when transferring material. Vapour is heavier than air and can travel considerable distance to a source of ignition and flashback. Vapours may form explosive mixture with air. The pressure in sealed containers can increase under the influence of heat.

Technical measures/Storage conditions
Keep containers tightly closed in a cool, well-ventilated place. Handle and open container with care. Handle under nitrogen, protect from moisture. Containers, storage tanks or drums are having temperature dependent pressure. Vessels with higher temperature must be depressurised into vent gas systems or handled under ventilation.

Suitable material
mild steel, stainless steel

Unsuitable material
Aluminium, copper, zinc, Tin, lead, including their alloys

Temperature class
T2

7.3. Specific end use(s)

Formulation
For specific end use information see the annex of this safety data sheet

SECTION 8: Exposure controls / personal protection

8.1. Control parameters

Exposure limits European Union

No exposure limits established

Exposure limits Ireland

Ireland OELs

Component	TWA (mg/m³)	TWA (ppm)	STEL (mg/m³)	STEL (ppm)	Skin Absorption	Sensitizer
Isopropylamine CAS: 75-31-0	12	5	24	10		

Notes
For details and further information please refer to the original regulation.

DNEL & PNEC

Isopropylamine, CAS: 75-31-0

Workers

DN(M)EL - long-term exposure - systemic effects - Inhalation	10 mg/m³
DN(M)EL - acute / short-term exposure - systemic effects - Inhalation	Medium hazard (no threshold derived)
DN(M)EL - long-term exposure - local effects - Inhalation	12 mg/m³
DN(M)EL - acute / short-term exposure - local effects - Inhalation	24 mg/m³
DN(M)EL - long-term exposure - systemic effects - Dermal	1.9 mg/kg bw/day
DN(M)EL - acute / short-term exposure - systemic effects - Dermal	Medium hazard (no threshold derived)
DN(M)EL - long-term exposure - local effects - Dermal	High hazard (no threshold derived)
DN(M)EL - acute / short-term exposure - local effects - Dermal	High hazard (no threshold derived)
DN(M)EL - local effects - eyes	Medium hazard (no threshold derived)

General population

DN(M)EL - long-term exposure - systemic effects - Inhalation	No hazard identified
DN(M)EL - acute / short-term exposure - systemic effects - Inhalation	No hazard identified
DN(M)EL - long-term exposure - local effects - Inhalation	No hazard identified
DN(M)EL - acute / short-term exposure - local effects - Inhalation	No hazard identified
DN(M)EL - long-term exposure - systemic effects - Dermal	No hazard identified
DN(M)EL - acute / short-term exposure - systemic effects - Dermal	No hazard identified
DN(M)EL - long-term exposure - local effects - Dermal	No hazard identified

DN(M)EL - acute / short-term exposure - local effects - Dermal	No hazard identified
DN(M)EL - long-term exposure - systemic effects - Oral	No hazard identified
DN(M)EL - acute / short-term exposure - systemic effects - Oral	No hazard identified
DN(M)EL - local effects - eyes	No hazard identified

Environment

PNEC aqua - freshwater	19 µg/l
PNEC aqua - marine water	1,9 µg/l
PNEC aqua - intermittent releases	0,19 mg/l
PNEC STP	10 mg/l
PNEC sediment - freshwater	161,5 µg/kg dw
PNEC sediment - marine water	16,15 µg/kg dw
PNEC Air	No hazard identified
PNEC soil	21,15 mg/kg
Secondary poisoning	No potential for bioaccumulation

8.2. Exposure controls

Special adaptations (REACh)
Not applicable.

Appropriate Engineering controls
General or dilution ventilation is frequently insufficient as the sole means of controlling employee exposure. Local ventilation is usually preferred. Explosion-proof equipment (for example fans, switches, and grounded ducts) should be used in mechanical ventilation systems.

Personal protective equipment

General industrial hygiene practice
Avoid contact with skin, eyes and clothing. Do not breathe vapours or spray mist. Ensure that eyewash stations and safety showers are close to the workstation location.

Hygiene measures
When using, do not eat, drink or smoke. Take off all contaminated clothing immediately. Wash hands before breaks and immediately after handling the product.

Eye protection
Tightly fitting safety goggles. In addition to goggles, wear a face shield if there is a reasonable chance for splash to the face.
Equipment should conform to EN 166

Hand protection
Wear protective gloves. Recommendations are listed below. Other protective material may be used, depending on the situation, if adequate degradation and permeation data is available. If other chemicals are used in conjunction with this chemical, material selection should be based on protection for all chemicals present.

Suitable material	butyl-rubber
Evaluation	according to EN 374: level 2
Glove thickness	approx 0,3 mm
Break through time	approx 20 min
Suitable material	polyvinylchloride
Evaluation	Information derived from practical experience
Glove thickness	approx 0,8 mm

Skin and body protection
Impervious clothing. Wear face-shield and protective suit for abnormal processing problems.

Respiratory protection
Respirator with K- filter. Full mask with above mentioned filter according to producers using requirements or self-contained breathing apparatus. Equipment should conform to EN 136 or EN 140 and EN 143.

Environmental exposure controls
Use product only in closed system. If leakage can not be prevented, the substance needs to be suck off at the emersion point, if possible without danger. Observe the exposure limits, clean exhaust air if needed. If recycling is not practicable, dispose of in compliance with local regulations. Inform the responsible authorities in case of leakage into the atmosphere, or of entry into waterways, soil or drains.

Additional advice
Further details on substance data can be found in the registration dossier under the following link: http://echa.europa.eu/information-on-chemicals/registered-substances. For specific exposure controls see the annex to this safety data sheet.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	liquid***
Colour	colourless
Odour	ammonia-like
Odour threshold	1,2 ppm
Melting point/freezing point	< -90 °C (Pour point) @ 1013 hPa
Method	DIN ISO 3016
Boiling point or initial boiling point and boiling range	32 °C @ 1013 hPa
Method	OECD 103
Flammability	Ignitable
Lower explosion limit	2 Vol %
Upper explosion limit	11,5 Vol %
Flash point	<= -25 °C @ 1013 hPa
Method	closed cup, ISO 2719
Autoignition temperature	355 °C @ 1016 hPa
Method	DIN 51794
Decomposition temperature	No data available
pH	13,1 (50 g/l in water @ 25 °C (77 °F)) DIN 19268
Kinematic Viscosity	0,470 mm²/s @ 20 °C***
Method	OECD 114***
Solubility	miscible, in water, OECD 105
Partition coefficient n-octanol/water (log value)	-0,5 @ 25 °C (77 °F) OECD 117

Vapour pressure

Values [hPa]	Values [kPa]	Values [atm]	@ °C	@ °F	Method
631	63,1	0,623	20	68	DIN EN 13016-2
770	77,3	0,763	25	77	DIN EN 13016-2

Density and/or relative density

Values	@ °C	@ °F	Method
0,6871	20	68	DIN 51757

Relative vapour density	2,04 (Air = 1) @ 20 °C (68 °F)
Particle characteristics	not applicable

9.2. Other information

Explosive properties	Does not apply, substance is not explosive. There are no chemical groups associated with explosive properties
Oxidizing properties	Does not apply, substance is not oxidising. There are no chemical groups associated with oxidizing properties
Molecular weight	59,11
Molecular formula	C3 H9 N
log Koc	1,64 OECD 106 read across
Dissociation constant	pKa 10,8 @ 23,5 °C (74,3 °F) OECD 112
Refractive index	1,373 @ 20 °C
Surface tension	68,5 mN/m (1 g/l @ 20°C (68°F)), OECD 115
Evaporation rate	No data available

hygroscopic.

SECTION 10: Stability and Reactivity

10.1. Reactivity

The reactivity of the product corresponds to the typical reactivity shown by the substance group as described in any text book on organic chemistry.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Vapours may form explosive mixture with air.

10.4. Conditions to avoid

Avoid contact with heat, sparks, open flame and static discharge. Avoid any source of ignition.

10.5. Incompatible materials

acids, strong oxidizing agents, halogenated hydrocarbon, acid anhydrides, acid chlorides.

10.6. Hazardous decomposition products

No decomposition if stored and applied as directed. If heated to thermal decomposition the following decomposition products may occur depending on the conditions. carbon monoxide (CO). nitrogen oxides (NOx). cyanides. nitric acid. nitriles.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Likely routes of exposure Ingestion, Inhalation, Eye contact, Skin contact

Acute toxicity
Isopropylamine (75-31-0)

Routes of Exposure	Endpoint	Values	Species	Method
Oral	LD50	< 173 mg/kg	rat, male	OECD 425
Dermal	LD50	> 400 mg/kg	rat, male/female	OECD 402
Inhalative	LC50	8,7 mg/l (4h)	rat, male/female	OECD 403

Isopropylamine, CAS: 75-31-0
Assessment
The available data lead to the classification given in section 2

Irritation and corrosion				
Isopropylamine (75-31-0)				
Target Organ Effects	Species	Result	Method	
Skin	rabbit	corrosive	OECD 404	3 min
Eyes	rabbit	corrosive	OECD 405	24h
Respiratory tract	mouse	RD50: 157 ppm	ASTM 981-84	15 min

Isopropylamine, CAS: 75-31-0
Assessment
The available data lead to the classification given in section 2

Sensitization				
Isopropylamine (75-31-0)				
Target Organ Effects	Species	Evaluation	Method	
Skin	guinea pig	not sensitizing	OECD 406	10 %, aqueous solution

Isopropylamine, CAS: 75-31-0
Assessment
Based on available data, the classification criteria are not met for:
Skin sensitization
For respiratory sensitization, no data are available

Subacute, subchronic and prolonged toxicity				
Isopropylamine (75-31-0)				
Type	Dose	Species	Method	
Subchronic toxicity	NOAEC: 500 mg/m³ (90 d)	rat, male/female	OECD 413	Inhalation

Isopropylamine, CAS: 75-31-0
Assessment
Based on available data, the classification criteria are not met for:
STOT RE

Carcinogenicity, Mutagenicity, Reproductive toxicity					
Isopropylamine (75-31-0)					
Type	Dose	Species	Evaluation	Method	
Developmental Toxicity	NOAEC: 1000 mg/m³	rat		OECD 414	Teratogenicity Inhalation
Developmental Toxicity	NOAEC: 500 mg/m³	rat		OECD 414	Maternal toxicity Inhalation
Mutagenicity		mouse lymphoma cells	negative (with metabolic activation)	OECD 476 (Mammalian Gene Mutation)	In vitro study
Mutagenicity		mouse	negative (without	OECD 476	In vitro study

		lymphoma cells	metabolic activation)	(Mammalian Gene Mutation)	
Mutagenicity		Salmonella typhimurium	negative (with metabolic activation)	OECD 471 (Ames)	In vitro study
Mutagenicity		Salmonella typhimurium	negative (without metabolic activation)	OECD 471 (Ames)	In vitro study
Mutagenicity		human lymphocytes	negative (with metabolic activation)	OECD 473 (Chromosomal Aberration)	In vitro study
Mutagenicity		human lymphocytes	negative (without metabolic activation)	OECD 473 (Chromosomal Aberration)	In vitro study
Reproductive toxicity	NOAEC: 500 mg/m³	rat, parental		OECD 415	Inhalation
Reproductive toxicity	NOAEC: 500 mg/m³	rat, 1. Generation, male/female		OECD 415	Inhalation

Isopropylamine, CAS: 75-31-0
CMR Classification
The available data on CMR properties are summarized in the table above. They do not indicate a classification into categories 1A or 1B
Evaluation
In vitro tests did not show mutagenic effects
Animal testing did not show any effects on fertility
In the absence of specific alerts no cancer testing is required

Isopropylamine, CAS: 75-31-0
Main symptoms
shortness of breath, convulsions, cough, hypertensive effect, narcosis, unconsciousness, discomfort, nausea.
Target Organ Systemic Toxicant - Single exposure
STOT SE
respiratory system
The available data lead to the classification given in section 2
Target Organ Systemic Toxicant - Repeated exposure
Based on available data, the classification criteria are not met for:
STOT RE

11.2. Information on other hazards

Endocrine disrupting properties
The substance has not been identified as having endocrine disrupting properties in accordance with section 2.3.
Isopropylamine, CAS: 75-31-0
Other adverse effects
Components of the product may be absorbed into the body by inhalation, ingestion and through the skin.
Note
Handle in accordance with good industrial hygiene and safety practice. Further details on substance data can be found in the registration dossier under the following link:
http://echa.europa.eu/information-on-chemicals/registered-substances.

SECTION 12: Ecological information

12.1. Toxicity

Acute aquatic toxicity			
Isopropylamine (75-31-0)			
Species	Exposure time	Dose	Method
Daphnia magna (Water flea)	48h	EC50: 47,4 mg/l	79/831/EEC.C2
Desmodesmus subspicatus	72h	EC50: 18,9 mg/l (Growth rate)	DIN 38412, part 9
Oncorhynchus mykiss (rainbow trout)	96h	LC50: 40 mg/l	OECD 203
Activated sludge (domestic)	30 min	EC50: >1000 mg/l (Growth inhibition)	OECD 209

Long term toxicity				
Isopropylamine (75-31-0)				
Type	Species	Dose	Method	
Aquatic toxicity	Desmodesmus subspicatus	NOEC: 1,25 mg/l (3d) Growth inhibition	DIN 38412 / part 9	

12.2. Persistence and degradability

Isopropylamine, CAS: 75-31-0
Biodegradation
70 - 80 % (28 d), activated sludge, aerobic, domestic, OECD 301 F.

Abiotic Degradation		
Isopropylamine (75-31-0)		
Type	Result	Method
Hydrolysis	not expected	
Photolysis	No data available	

12.3. Bioaccumulative potential

Isopropylamine (75-31-0)		
Type	Result	Method
log Pow	-0,5 @ 25 °C (77 °F)	measured, OECD 117
BCF	not expected	

12.4. Mobility in soil

Isopropylamine (75-31-0)		
Type	Result	Method
Surface tension	68,5 mN/m (1 g/l @ 20°C (68°F))	OECD 115
Adsorption/Desorption	Koc: 43,2	OECD 106 read across
Distribution to environmental compartments	no data available	

12.5. Results of PBT and vPvB assessment

Isopropylamine, CAS: 75-31-0
PBT and vPvB assessment
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT), nor very persistent nor very bioaccumulating (vPvB)

12.6. Endocrine disrupting properties

The substance has not been identified as having endocrine disrupting properties in accordance with section 2.3.

12.7. Other adverse effects

Isopropylamine, CAS: 75-31-0
No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product Information
Disposal required in compliance with all waste management related state and local regulations. The choice of the appropriate method of disposal depends on the product composition by the time of disposal as well as the local statutes and possibilities for disposal.
Hazardous waste according to European Waste Catalogue (EWC)

Uncleaned empty packaging
Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse.

SECTION 14: Transport information

ADR/RID

14.1. UN number or ID number	UN 1221
14.2. UN proper shipping name	Isopropylamine
14.3. Transport hazard class(es)	3
Subsidiary Risk	8
14.4. Packing group	I
14.5. Environmental hazards	no
14.6. Special precautions for user	
ADR Tunnel restriction code	(C/E)
Classification Code	FC
Hazard Number	338

ADN ADN Container

14.1. UN number or ID number	UN 1221
14.2. UN proper shipping name	Isopropylamine
14.3. Transport hazard class(es)	3
Subsidiary Risk	8
14.4. Packing group	I

14.5. Environmental hazards	no
14.6. Special precautions for user	
Classification Code	FC
Hazard Number	338

ICAO-TI / IATA-DGR

14.1. UN number or ID number	UN 1221
14.2. UN proper shipping name	Isopropylamine
14.3. Transport hazard class(es)	3
Subsidiary Risk	8
14.4. Packing group	I
14.5. Environmental hazards	no
14.6. Special precautions for user	no data available

IMDG

14.1. UN number or ID number	UN 1221
14.2. UN proper shipping name	Isopropylamine
14.3. Transport hazard class(es)	3
Subsidiary Risk	8
14.4. Packing group	I
14.5. Environmental hazards	no
14.6. Special precautions for user	
EmS	F-E, S-C
14.7. Maritime transport in bulk according to IMO instruments	***
Product name	Isopropylamine
Ship type	2
Pollution category	Y
Hazard class	S/P***

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Regulation 1272/2008, Annex VI

Isopropylamine, CAS: 75-31-0

Classification	Flam. Liq. 1; H224 Eye Irrit. 2; H319 STOT SE 3; H335 Skin Irrit. 2; H315
Hazard pictograms	GHS02 Flame GHS07 Exclamation mark
Signal word	Danger
Hazard statements	H224, H319, H335, H315

DI 2012/18/EU (Seveso III)

Category	Annex I, part 1:

H2
P5a - c; depending on conditions

DI 1999/13/EC (VOC Guideline)

Component	Status
Isopropylamine CAS: 75-31-0	regulated

International Inventories

Isopropylamine, CAS: 75-31-0
AICS (AU)
DSL (CA)
IECSC (CN)
EC-No. 2008609 (EU)
ENCS (2)-131 (JP)
ISHL (2)-131 (JP)
KECI KE-29257 (KR)
INSQ (MX)
PICCS (PH)
TSCA (US)
NZIoC (NZ)
TCSI (TW)

15.2. Chemical safety assessment

The Chemical Safety Report (CSR) has been generated. For Exposure Scenarios see the annex.

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3
H224: Extremely flammable liquid and vapour.
H301: Toxic if swallowed.
H311: Toxic in contact with skin.
H331: Toxic if inhaled.
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H335: May cause respiratory irritation.

Abbreviations
A table of terms and abbreviations can be found under the following link:
http://echa.europa.eu/documents/10162/13632/information_requirements_r20_en.pdf

Training advice
For effective first-aid, special training / education is needed.

Sources of key data used to compile the datasheet
Information contained in this safety data sheet is based on OQ owned data and public sources deemed valid or acceptable. The absence of data elements required by OSHA, ANSI or Annex II, Regulation 1907/2006/EC indicates, that no data meeting these requirements is available.

Further information for the safety data sheet

Changes against the previous version are marked by ***. Observe national and local legal requirements. For more information, other material safety data sheets or technical data sheets please consult the OQ homepage (www.chemicals.oq.com).

Disclaimer

For industrial use only. The information contained herein is accurate to the best of our knowledge. We do not suggest or guarantee that any hazards listed herein are the only ones which exist. OQ Chemicals makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances. User has the sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. User must meet all applicable safety and health standards.

End of Safety Data Sheet

Annex to the extended Safety Data Sheet (eSDS)

General information

A quantitative approach used to conclude safe use for:
Environmental compartment
Long-term Systemic effects via inhalation
Long term local hazards via inhalation
Acute local hazards via inhalation
A qualitative approach used to conclude safe use for:
Acute systemic hazards via skin
Acute local hazards via skin
Long term local hazards via skin
Acute systemic hazards via skin
Local hazards via eyes

Operational conditions and risk management measures

Following operational conditions and risk management measures, are based on qualitative risk characterisation:
Wear suitable face shield.
Substance/task appropriate gloves
Full skin coverage with appropriate light-weight barrier material
Chemical goggles or safety glasses
Any measure to eliminate exposure should be considered
Containment of source except for short term exposure (e.g. taking sample)
Design closed system to allow for easy maintenance
If possible keep equipment under negative pressure
Control staff entry to work area
Ensure all equipment well maintained
Permit to work for maintenance work
Regular cleaning of equipment and work area
Training for staff on good practice
Procedures and training for emergency decontamination and disposal
Good standard of personal hygiene
Recording of any 'near miss' situations
Supervision in place to check that the RMMs in place are being used correctly and OCs followed.

Exposure scenario identification

1 Formulation & (re)packing of substances and mixtures

Exposure estimation and reference to its source

Number of the ES 1

Short title of the exposure scenario
Formulation & (re)packing of substances and mixtures

Sector of uses [SU]
SU3: Industrial uses: Uses of substances as such or in preparations at industrial sites
SU10: Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

Process categories [PROC]
PROC1: Use in closed process, no likelihood of exposure
PROC2: Use in closed, continuous process with occasional controlled exposure
PROC3: Use in closed batch process (synthesis or formulation)
PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises
PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC15: Use as laboratory reagent

Processes and activities covered by the exposure scenario
Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tabletting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenanance and associated laboratory activities.

Further explanations
Industrial use
Assessment tool used:
Chesar 3.5
liquid
Assumes use at not more than 20°C above ambient temperature (unless stated differently)
Covers percentage substance in the product up to 100 % (unless stated differently).
Assumes an advanced standard of occupational Health and Safety Management System

Number of the contributing scenario 1
Contributing exposure scenario controlling environmental exposure for ERC 2

Further specification

assessment tool used:, Chesar 3.5, release factors for (Sp)ERC were modified.
Amounts used
Daily amount per site: 10 to
Annual amount per site: 1000 to
Fraction of Regional tonnage used locally: 1
Technical conditions and measures at process level (source) to prevent release
Release fraction to air from process: 2,5%
Release fraction to wastewater from process: 0,025%
Release fraction to soil from process: 0,01%
Conditions and measures related to municipal sewage treatment plant
Size of industrial sewage treatment plant (m3/d): 2000
The minimum grade of elimination in the sewage plant is (%): 87,74
Do not apply industrial sludge to natural soils

Number of the contributing scenario 2
Contributing exposure scenario controlling worker exposure for PROC 1

Frequency and duration of use
8 h (full shift)

Other given operational conditions affecting workers exposure
Indoor and outdoor use
Technical conditions and measures to control dispersion from source towards the worker
provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves (tested to EN374) and eye protection.

Number of the contributing scenario **3**
Contributing exposure scenario controlling worker exposure for
PROC 2

Frequency and duration of use
8 h (full shift)
Other given operational conditions affecting workers exposure
Indoor use
Technical conditions and measures to control dispersion from source towards the worker
Effectiveness of LEV (local exhaust ventilation): 90 % (inhalative); 90 % (dermal). provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves (tested to EN374) and eye protection. Wear respiratory protection (Efficiency: 95 %).

Number of the contributing scenario **4**
Contributing exposure scenario controlling worker exposure for
PROC 3

Frequency and duration of use
8 h (full shift)
Other given operational conditions affecting workers exposure
Indoor use
Technical conditions and measures to control dispersion from source towards the worker
Effectiveness of LEV (local exhaust ventilation): 90 % (inhalative); 90 % (dermal). provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves (tested to EN374) and eye protection. Wear respiratory protection (Efficiency: 95 %).

Number of the contributing scenario **5**
Contributing exposure scenario controlling worker exposure for
PROC 4

Frequency and duration of use
8 h (full shift)
Other given operational conditions affecting workers exposure
Indoor use
Technical conditions and measures to control dispersion from source towards the worker
Effectiveness of LEV (local exhaust ventilation): 90 % (inhalative); 90 % (dermal). provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. Wear respiratory protection (Efficiency: 95 %). Wear suitable gloves (tested to EN374) and eye protection.

Number of the contributing scenario **6**
Contributing exposure scenario controlling worker exposure for
PROC 5

Frequency and duration of use
8 h (full shift)
Other given operational conditions affecting workers exposure
Indoor use
Technical conditions and measures to control dispersion from source towards the worker
Effectiveness of LEV (local exhaust ventilation): 90 % (inhalative); 90 % (dermal). provide a good standard of controlled ventilation (5 to 10 air changes per hour) .
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. Wear respiratory protection (Efficiency: 95 %). Wear suitable gloves (tested to EN374) and eye protection.

Number of the contributing scenario **7**
Contributing exposure scenario controlling worker exposure for PROC 8a

Frequency and duration of use
8 h (full shift)
Other given operational conditions affecting workers exposure
Indoor use
Technical conditions and measures to control dispersion from source towards the worker
Effectiveness of LEV (local exhaust ventilation): 90 % (inhalative); 90 % (dermal). provide a good standard of controlled ventilation (5 to 10 air changes per hour) .
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves and eye/face protection. Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. Wear respiratory protection (Efficiency: 95 %).

Number of the contributing scenario **8**
Contributing exposure scenario controlling worker exposure for PROC 8b

Frequency and duration of use
8 h (full shift)
Other given operational conditions affecting workers exposure
Indoor use
Technical conditions and measures to control dispersion from source towards the worker
Effectiveness of LEV (local exhaust ventilation): 95 % (inhalative); 95 % (dermal). provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves and eye/face protection. Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. Wear respiratory protection (Efficiency: 95 %).

Number of the contributing scenario **9**
Contributing exposure scenario controlling worker exposure for PROC 9

Product characteristics
Covers percentage substance in the product up to 100 % (unless stated differently)
Frequency and duration of use
8 h (full shift)
Other given operational conditions affecting workers exposure
Indoor use
Technical conditions and measures to control dispersion from source towards the worker
Effectiveness of LEV (local exhaust ventilation): 90 % (inhalative); 90 % (dermal). provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves and eye/face protection. Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. Wear respiratory protection (Efficiency: 95 %).

Number of the contributing scenario **10**
Contributing exposure scenario controlling worker exposure for PROC 15

Product characteristics
Liquid
Frequency and duration of use
1 h per shift
Other given operational conditions affecting workers exposure
Indoor use
Technical conditions and measures to control dispersion from source towards the worker
provide a good standard of controlled ventilation (5 to 10 air changes per hour) . Effectiveness of LEV (local exhaust ventilation): 90 % (inhalative); 90 % (dermal).
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Number of the contributing scenario **11**

Contributing exposure scenario controlling worker exposure for PROC 8a

Product characteristics
Liquid
Frequency and duration of use
1 h per shift
Other given operational conditions affecting workers exposure
Indoor use
Technical conditions and measures to control dispersion from source towards the worker
provide a basic standard of general ventilation (1 to 3 air changes per hour). Effectiveness of LEV (local exhaust ventilation): 90 % (inhalative).
Conditions and measures related to personal protection, hygiene and health evaluation
Wear respiratory protection (Efficiency: 95 %). Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.

Fresh Water (Pelagic)	PEC: 0,015 mg/l; RCR: 0,806
Fresh Water (Sediment)	PEC: 0.121 mg/kg dw; RCR: 0.751
Marine Water (Pelagic)	PEC: 1.53E-3 mg/l; RCR: 0.806
Marine Water (Sediment)	PEC: 0.012 mg/kg dw; RCR: 0.751
Agricultural Soil	PEC: 3.68E-3 mg/kg dw; RCR: 0.174
Sewage Treatment Plant (Effluent)	PEC: 0,153 mg/l; RCR: 0.015
Man via environment – Inhalation	Concentration in air: 0,019 mg/m³; RCR: 0,011
Man via environment – Oral	Exposure via food consumption: 4,68E-4 mg/kg bw/day; RCR: 0,01
Man via environment - combined routes	RCR: 0,011

Human exposure prediction (oral, dermal, inhalative)
Oral exposure is not expected to occur. EE(inhal): Estimated inhalative exposure [mg/m³]. EE(derm): Estimated dermal exposure [mg/kg b.w./d]. Exposure estimates are given for short-term or long-term, systemic or local exposure depending on which lead to more conservative risk characterization ratios. The RMMs described above suffice to control risks for both local and systemic effects.

Proc 1	EE(inhal): 0,069; EE(derm): 6.8E-3
Proc 2	EE(inhal): 0,862; EE(derm): 0,027
Proc 3	EE(inhal): 1,724; EE(derm): 0,014
Proc 4	EE(inhal): 3,448; EE(derm): 0,034
Proc 5	EE(inhal): 3,694; EE(derm): 0,069
Proc 8a	EE(inhal): 3.694; EE(derm): 0.069 - Contributing Scenarios 7
	EE(inhal): 12.31; EE(derm): 0.137 - Contributing Scenarios 11
Proc 8b	EE(inhal): 2,586; EE(derm): 0,034
Proc 9	EE(inhal): 6,896; EE(derm): 0.034
Proc 15	EE(inhal): 14.77; EE(derm): 1.36E-3

Risk characterisation
RCR(inhal): inhalative risk characterisation ratio; RCR(derm): dermal risk characterisation ratio; total RCR= RCR(inhal) +RCR(derm). Where required local and systemic effects were evaluated both for short-term and long-term exposure. The RCR's given correspond in each case to the most conservative calculated values.

Proc 1	RCR(inhal): 0,01; RCR(derm): 0,01
Proc 2	RCR(inhal): 0,036; RCR(derm): 0,014
Proc 3	RCR(inhal): 0,072; RCR(derm): 0,01
Proc 4	RCR(inhal): 0,144; RCR(derm): 0,018
Proc 5	RCR(inhal): 0,154; RCR(derm): 0,036
Proc 8a	RCR(inhal): 0,154; RCR(derm): 0,036 - Contributing Scenarios 7
	RCR(inhal): 0.513; RCR(derm): 0.072 - Contributing Scenarios 11
Proc 8b	RCR(inhal): 0,108; RCR(derm): 0,018
Proc 9	RCR(inhal): 0,287; RCR(derm): 0,018
Proc 15	RCR(inhal): 0.616; RCR(derm): 0,01

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES
Usage of relase factors allows downstream users to verify in a first approximation, if the combination of local usage and production conditions meets the defined release quantities resulting from this exposure scenario (calculated as M(site) [see amounts used, contributing scenario 1] x release factor [Technical conditions and measures at process level (source) to prevent release; contributing scenario 1])

associated uses:

Other combinations of operational conditions may also be safe. Please contact OQ in case your local operational conditions differ from the ones described above and you are unsure if they are also safe

Human exposure prediction (oral, dermal, inhalative)
Oral exposure is not expected to occur. EE(inhal): Estimated inhalative long-term exposure [mg/m³]; EE(derm): Estimated dermal long-term exposure [mg/kg b.w./d]. Exposure estimates are given for either short-term or long-term exposure depending on which lead to more conservative risk characterisation ratios. The RMMs described above suffice to control risks for both local and systemic effects.

Proc 1	EE(inhal): 0.025 ; EE(derm): 0.069
Proc 2	EE(inhal): 2.463 ; EE(derm): 0.027
Proc 3	EE(inhal): 6.157 ; EE(derm): 0.007
Proc 4	EE(inhal): 4.926 ; EE(derm): 0.137
Proc 8a	EE(inhal): 7.389 ; EE(derm): 0.027
Proc 8b	EE(inhal): 3.694 ; EE(derm): 0.137
Proc 9	EE(inhal): 1.231 ; EE(derm): 0.137
Proc 15	EE(inhal): 2.463 ; EE(derm): 0.007

Risk characterisation
RCR(inhal): inhalative risk characterisation ratio; RCR(derm): dermal risk characterisation ratio; total RCR= RCR(inhal) +RCR(derm). Where required local and systemic effects were evaluated both for short-term and long-term exposure. The RCR's given correspond in each case to the most conservative calculated values.

Proc 1	RCR(inhal): 0.002 ; RCR(derm): 0.014
Proc 2	RCR(inhal): 0.205 ; RCR(derm): 0.006
Proc 3	RCR(inhal): 0.513 ; RCR(derm): 0.001
Proc 4	RCR(inhal): 0.411 ; RCR(derm): 0.029
Proc 8a	RCR(inhal): 0.616 ; RCR(derm): 0.006
Proc 8b	RCR(inhal): 0.308 ; RCR(derm): 0.029
Proc 9	RCR(inhal): 0.103 ; RCR(derm): 0.029
Proc 15	RCR(inhal): 0.205 ; RCR(derm): 0.001

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES
Usage of relase factors allows downstream users to verify in a first approximation, if the combination of local usage and production conditions meets the defined release quantities resulting from this exposure scenario (calculated as M(site) [see amounts used, contributing scenario 1] x release factor [Technical conditions and measures at process level (source) to prevent release; contributing scenario 1])

associated uses:

Other combinations of operational conditions may also be safe. Please contact OQ in case your local operational conditions differ from the ones described above and you are unsure if they are also safe