SAFETY DATA SHEET

According to EC Regulation 1907/2006/EC

Diisobutylamine

Revision Date *23-Jan-2013*
Revision Number *2*

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product Identifier

Product Name	Diisobutylamine

Use of the Substance/Mixture

Identified uses	Chemical intermediate

Manufacturer or supplier's details

Company/Undertaking Identification	Taminco BVBA
Address	Pantserschipstraat 207 9000 GENT BELGIUM
E-mail address	MSDS_FCH@taminco.com
Telephone	(+32) 9 254 14 11
Telefax	(+32) 9 254 14 10

Emergency Telephone Number

Emergency Telephone Number	(+32) 9 254 10 36

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Classification according to EU Directives 67/548/EEC or 1999/45/EC

R10
C : R34
Xn : R20/21/22
S26, S36/37/39, S45

REGULATION (EC) No 1272/2008

Classification of the substance or mixture	H226 : Flam. Liq. cat. 3 H301 : Acute oral Tox. cat. 3 H312 : Acute dermal Tox. cat. 4 H331 : Acute inhalation Tox. cat. 3 H314 : Skin Corr. cat. 1A

Precautionary Statement - Prevention	P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking P233 - Keep container tightly closed P240 - Ground/bond container and receiving equipment P241 - Use explosion-proof electrical/ventilating/lighting/equipment P242 - Use only non-sparking tools P243 - Take precautionary measures against static discharge P261 - Avoid breathing dust/fume/gas/mist/vapors/spray P264 - Wash face thoroughly after handling P270 - Do not eat, drink or smoke when using this product P271 - Use only outdoors or in a well-ventilated area P280 - Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statement - Response	P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower P302 + P352 - IF ON SKIN: Wash with plenty of soap and water P363 - Wash contaminated clothing before reuse P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician

Precautionary Statement - Storage	P403 + P235 - Store in a well-ventilated place. Keep cool P403 + P233 - Store in a well-ventilated place. Keep container tightly closed P405 - Store locked up

Precautionary Statement - Disposal	P501 - Dispose of contents/container to an approved incineration plant

Label elements

Product Name Diisobutylamine

Hazard pictograms

Signal Word
Danger

Hazard Statements
H226 - Flammable liquid and vapor
H301 - Toxic if swallowed
H331 - Toxic if inhaled
H312 - Harmful in contact with skin
H314 - Causes severe skin burns and eye damage
Precautionary Statements
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

Other hazards

Other hazards which do not result in classification
None known

For the full text of the R phrases mentioned in this Section, see Section 16

3. COMPOSITION/INFORMATION ON INGREDIENTS

Haz/Non-haz

Chemical Name	CAS-No	Weight %	EINECS	Registration number
Diisobutylamine	110-96-3	100	203-819-3	

4. FIRST AID MEASURES

FIRST AID MEASURES

General Advice
If symptoms persist, call a physician. Show this material safety data sheet to the doctor in attendance.

Eye Contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes
Obtain medical attention

Skin Contact
Take off all contaminated clothing immediately
Soap
Consult a physician

Inhalation
Move to fresh air
If breathing is difficult, give oxygen
If not breathing, give artificial respiration
Consult a physician

Ingestion

Do not induce vomiting
If conscious, drink plenty of water
Never give anything by mouth to an unconscious person
Obtain medical attention

Most important symptoms and effects, both acute and delayed

- Causes skin and eye burns
- Inhalation of vapors is irritating to the respiratory system, may cause throat pain and cough
- Risk of serious damage to the lungs (by inhalation)
- If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach
- Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting
- Symptoms may be delayed

Indication of immediate medical attention and special treatment needed

- Consult a physician

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

- carbon dioxide (CO_2)
- water spray
- dry chemical
- Alcohol-resistant foam

Extinguishing media which must not be used for safety reasons

- high volume water jet

Specific Hazards Arising from the Chemical

Specific hazards

- Flammable
- Vapors are heavier than air and may spread along floors
- Vapors may form explosive mixture with air
- Flash back possible over considerable distance
- Heating or fire can release toxic gas

  Carbon oxides
  Nitrogen oxides (NOx)
  Ammonia

Specific methods

- In the event of fire, cool tanks with water spray
- Keep product and empty container away from heat and sources of ignition

Protective Equipment and Precautions for Firefighters

Wear self contained breathing apparatus for fire fighting if necessary

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- Avoid contact with skin, eyes and clothing
- Evacuate personnel to safe areas
- Keep people away from and upwind of spill/leak
- Wear self-contained breathing apparatus and protective suit

Environmental precautions

- Should not be released into the environment
- Hose down gases, fumes and/or dust with water
- Prevent product from entering drains
- Do not flush into surface water or sanitary sewer system

Methods and materials for containment and cleaning up

- Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container
- Take up mechanically and collect in suitable container for disposal
- Large spills should be collected mechanically (remove by pumping) for disposal

7. HANDLING AND STORAGE

Precautions for safe handling

- Use only in area provided with appropriate exhaust ventilation
- Use spark-proof tools and explosion-proof equipment
- Wear personal protective equipment
- Do not eat, drink or smoke when using this product
- Wash hands after handling
- Remove contaminated clothing and protective equipment before entering eating areas
- Ensure that eyewash stations and safety showers are close to the workstation location
- Avoid breathing vapors or mists

Conditions for safe storage, including any incompatibilities

- In accordance with local and national regulations
- Keep away from open flames, hot surfaces and sources of ignition
- Keep containers tightly closed in a dry, cool and well-ventilated place
- Store in original container

Specific end uses

See also section 1

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Exposure controls

Engineering Controls
- Local exhaust

Personal Protective Equipment

Eye/face Protection
- Tightly fitting safety goggles
- Face-shield
- Respirator with a full face mask

Skin Protection
- Wear suitable protective equipment
- Complete suit protecting against chemicals

Hand Protection	• Neoprene gloves • Solvent-resistant gloves (butyl-rubber) • The selected protective gloves have to satisfy the specifications of EU Directive 89/689/EEC and the standard EN 374 derived from it • The suitability for a specific workplace should be discussed with the producers of the protective gloves
Respiratory Protection	• In the case of vapor formation use a respirator with filter model K • self-contained breathing apparatus (EN 133) (in case of higher concentration)
Environmental exposure controls	• Prevent product from entering drains • Do not contaminate surface water • Avoid subsoil penetration

9. PHYSICAL AND CHEMICAL PROPERTIES

General Information

Physical State	Liquid
Color	Colorless
Odor	Ammoniacal

Important Health Safety and Environmental Information

Boiling Point/Range	139.44°C
Flash Point	29.44°C
Viscosity	Not applicable
Vapor Pressure	5.17 mmHg @ 21 °C
Vapor Density	4.45 (Air =1.0)
Partition coefficient: n-octanol/water	No information available
pH	Alkaline
Water solubility	Slightly soluble
Oxidizing Properties	Not applicable
Explosive Properties	No information available
Melting Point/Range	No data available
Density	0.75 g/cm3
Autoignition Temperature	No data available

10. STABILITY AND REACTIVITY

Reactivity

Chemical Stability

- Stable under normal conditions
- Hazardous polymerisation does not occur

Possibility of hazardous reactions

None under normal processing

Conditions to Avoid

- Heat, flames and sparks
- Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors)

Incompatible materials to avoid

- Zinc
- Copper
- Aluminum
- Strong acids and oxidizing agents
- Halogenated hydrocarbons

Hazardous Decomposition Products

- Heating or fire can release toxic gas
  - Nitrogen oxides (NOx)
  - Carbon monoxide
  - Ammonia

11. TOXICOLOGICAL INFORMATION

Product Information

LD50/oral/rat =	258 mg/kg
LD50/dermal/rabbit =	> 1000 mg/kg
LC50/inhalation/1h/rat =	6 mg/l
Eye irritation	corrosive
Skin irritation	corrosive
Mutagenic Effects	Not mutagenic in AMES Test

Human experience

Human experience	Inhalation of vapors is irritating to the respiratory system, may cause throat pain and cough Risk of serious damage to the lungs (by inhalation) If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach Causes skin and eye burns Symptoms may be delayed Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxicity to fish	LC50 : 20 mg/l
Toxicity to daphnia	No information available
Toxicity to algae	No information available
Toxicity to bacteria	- No information available

Mobility

No information available

Persistence and degradability

Readily biodegradable, according to appropriate OECD test

Bioaccumulative Potential

no data available

Results of PBT and vPvB assessment

- This substance is not considered to be persistent, bioaccumulating nor toxic (PBT)
- This substance is not considered to be very persistent nor very bioaccumulating (vPvB)

Other adverse effects

None known based on information supplied

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method

- Should not be released into the environment
- Dispose of contents/container in accordance with local regulation

Contaminated Packaging

- Empty containers should be taken to an approved waste handling site for recycling or disposal

14. TRANSPORT INFORMATION

Road transport

Class	3
Subsidiary Class	8
UN-No	UN2361
Packing Group	III
Marine pollutant	no
Proper Shipping Name	Diisobutylamine

Sea transport

Class	3
Subsidiary Class	8
UN-No	UN2361
Packing Group	III
Marine pollutant	no
Proper Shipping Name	Diisobutylamine

Air transport

Class	3
Subsidiary Class	8
UN-No	UN2361
Packing Group	III
Marine pollutant	no
Proper Shipping Name	Diisobutylamine

15. REGULATORY INFORMATION

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

International Inventories

Chemical Name	TSCA	EINECS	DSL	ENCS	AICS
Diisobutylamine	X	203-819-3	NDSL - Listed	(2)-137	Listed.

Chemical Safety Assessment

- no data available

16. OTHER INFORMATION

This data sheet contains changes from the previous version in section(s)

Revision Date 23-Jan-2013

Reason for revision Classification and hazard labeling

Literary Reference -Chemiekaarten : 25th ed. - 2010
-Taminco Proprietary Studies

List of relevant R-phrases

- R10 - Flammable
- R20/21/22 - Harmful by inhalation, in contact with skin and if swallowed
- R34 - Causes burns
- S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
- S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection
- S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)

Training advice

Provide adequate information, instruction and training for operators

Further information for the material safety data sheet

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 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. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release.

End of Material Safety Data Sheet