SAFETY DATA SHEET

According to EC Regulation 1907/2006/EC

Amietol® M11

Revision Date *27-Feb-2012*
Revision Number *2*

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

Product Identifier

Product Name	Amietol® M11
Synonyms	2-Methylaminoethanol (MMEA)
REACH Registration Number	01-2119492297-26-0000

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

C : R34
Xn : R21/22
S1/2, S26, S36/37/39, S45

REGULATION (EC) No 1272/2008

Classification of the substance or mixture	H302 : Acute oral Tox. cat. 4 H312 : Acute dermal Tox. cat. 4 H314 : Skin Corr. cat. 1B H335 : STOT SE 3

Precautionary Statement - Prevention	P260 - Do not breathe dust/fume/gas/mist/vapors/spray P264 - Wash face, hands and any exposed skin 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	P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting 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 P310 - Immediately call a POISON CENTER or doctor/physician

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

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

Label elements

Product Name Amietol® M11

Hazard pictograms

Signal Word
Danger

Hazard Statements
H312 - Harmful in contact with skin
H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H335 - May cause respiratory irritation

Precautionary Statements
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
P310 - Immediately call a POISON CENTER or doctor/physician

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
N-Methylethanolamine	109-83-1	99.5	203-710-0	01-2119492297-26-0000

4. FIRST AID MEASURES

FIRST AID MEASURES

General Advice

Remove to fresh air immediately. Get medical attention immediately. Show this material safety data sheet to the doctor in attendance. Take off contaminated clothing and shoes immediately. If symptoms persist, call a physician.

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes
Remove contact lenses
Obtain medical attention
Continue rinsing eyes during transport to hospital

Skin Contact

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes
Consult a physician
Wash contaminated clothing before re-use
Thoroughly clean shoes before reuse

Inhalation

P340 - Remove to fresh air and keep at rest in a position comfortable for breathing
If breathing is difficult, give oxygen
If not breathing, give artificial respiration
Symptoms may be delayed
Immediate medical attention is required

Ingestion

rinse mouth
Clean mouth with water and afterwards drink plenty of water
Never give anything by mouth to an unconscious person
Do not induce vomiting
If swallowed, seek medical advice immediately and show this container or label

Most important symptoms and effects, both acute and delayed

- Causes skin and eye burns
- May cause harm to the unborn child
- Harmful if swallowed
- Harmful in contact with skin
- Smallest quantities reaching the lungs through swallowing or subsequent vomiting may result in lung edema or pneumonia
- May cause adverse kidney effects
- May cause adverse liver effects
- Corrosive to the eyes and may cause severe damage including blindness
- Exposure may result in reddening, tears and itching of the eyes and soreness in the nose and throat, together with coughing
- Inhalation of vapors is irritating to the respiratory system, may cause throat pain and cough
- Shortness of breath
- Suffocation
- Lung edema
- Pneumonia
- Dermal absorption possible
- nausea
- Diarrhea
- Vomiting
- Abdominal pain

Indication of immediate medical attention and special treatment needed

- Consult a physician

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

- Alcohol-resistant foam
- dry chemical
- carbon dioxide (CO2)
- water spray

Extinguishing media which must not be used for safety reasons

- high volume water jet

Specific Hazards Arising from the Chemical

Specific hazards

- Combustible material
- Vapors may form explosive mixture with air
- Vapors are heavier than air and may spread along floors
- Heating or fire can release toxic gas

  Nitrogen oxides (NOx)
  Carbon monoxide

Specific methods

- Cool containers / tanks with water spray
- Keep product and empty container away from heat and sources of ignition
- Do not flush into surface water or sanitary sewer system
- Collect contaminated fire extinguishing water separately. This must not be discharged into drains

Protective Equipment and Precautions for Firefighters

Wear full protective clothing and self-contained breathing apparatus

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
- Rubber gloves

Environmental precautions

- Should not be released into the environment
- Remove immediately adhering matter
- Prevent product from entering drains
- Do not flush into surface water or sanitary sewer system

Methods and materials for containment and cleaning up

- Wear self-contained breathing apparatus and protective suit
- Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container
- Neutralize with hydrochloric or sulfuric acids

7. HANDLING AND STORAGE

Precautions for safe handling

- Use only in area provided with appropriate exhaust ventilation
- 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 container tightly closed
- Keep in a dry, cool and well-ventilated place
- Incompatible with strong acids and oxidizing agents

Specific end uses

See also section 1
Exposure scenario : Annex

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	EU	Japan
N-Methylethanolamine	Not listed		

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 A
- 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	Amine-like

Important Health Safety and Environmental Information

Boiling Point/Range	160°C
Flash Point	76°C
Viscosity	17.8 mPas @ 20°C
Vapor Pressure	2.01 hPa @ 30.6 °C
Vapor Density	2.6 (Air =1.0)
Partition coefficient: n-octanol/water	log Pow : -0.91
pH	13.6 (@100 g/l, 20°C)
Water solubility	Miscible 1000 g/l @ 20°C
Oxidizing Properties	Not applicable
Explosion Limits	1.6 - 19.8 vol. %
Explosive Properties	Not explosive
Melting Point/Range	-4.5°C
Density	0.94 g/cm3 @ 20 °C
Flammability	Combustible liquid The substance or mixture is not classified as pyrophoric
Autoignition Temperature	350°C
Surface tension	34.4 mN/m @ 20 °C

Dissociation constant	pKa: 9.95 @ 20°C

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
- Isocyanates

Hazardous Decomposition Products
- Heating or fire can release toxic gas
  - nitrogen oxides (NOx)
  - Carbon monoxide
  - nitrosamine
  - Ammonia

11. TOXICOLOGICAL INFORMATION

Product Information

LD50/oral/rat =	1880 mg/kg
LD50/dermal/rabbit =	> 2000 mg/kg
LC50/inhalation/4h/rat =	2000 mg/m³
Eye irritation	corrosive
Skin irritation	corrosive
Sensitization	Not required
Mutagenic Effects	Did not show mutagenic effects in animal experiments
Reproductive toxicity	Caution - substance not yet fully tested Possible risk of harm to the unborn child
Carcinogenic effects	Not expected

Human experience

Human experience	Causes skin and eye burns Smallest quantities reaching the lungs through swallowing or subsequent vomiting may result in lung edema or pneumonia May cause adverse liver effects May cause adverse kidney effects Corrosive to the eyes and may cause severe damage including blindness Exposure may result in reddening, tears and itching of the eyes and soreness in the nose and throat, together with coughing Inhalation of vapors is irritating to the respiratory system, may cause throat pain and cough Shortness of breath Suffocation Lung edema Pneumonia nausea Diarrhea Vomiting Abdominal pain

12. ECOLOGICAL INFORMATION

Ecotoxicity

LC50/96h/Brachydanio rerio	> 100 mg/l
EC50/48h/daphnia =	33 mg/l
EC50/72h/algae =	28.1 mg/l
Toxicity to bacteria	EC50 (30 min) :30 mg/l

Mobility

Koc = < 50

Persistence and degradability

According to the results of tests of biodegradability this product is considered as being readily biodegradable

Bioaccumulative Potential

Not expected

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

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method

- Should not be released into the environment
- Dispose of in accordance with local regulations

Contaminated Packaging

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

14. TRANSPORT INFORMATION

Road transport

Class	8
UN-No	UN2735
Packing Group	III
Marine pollutant	no
Proper Shipping Name	Amines, liquid, corrosive, n.o.s. (N-Methylaminoethanol)
Hazard Indicator	80

Sea transport

Class	8
UN-No	UN2735
Packing Group	III
Marine pollutant	no
Proper Shipping Name	Amines, liquid, corrosive, n.o.s. (N-Methylaminoethanol)

Air transport

Class	8
UN-No	UN2735
Packing Group	III
Marine pollutant	no
Proper Shipping Name	Amines, liquid, corrosive, n.o.s. (N-Methylaminoethanol)

15. REGULATORY INFORMATION

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

International Inventories

Chemical Name	TSCA	EINECS	DSL	ENCS	AICS
N-Methylethanolamine	Listed.	203-710-0	DSL - Listed	2-295	Listed.

Chemical Safety Assessment

- A Chemical Safety Assessment has been carried out for this substance

16. OTHER INFORMATION

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

Revision Date 27-Feb-2012

Reason for revision	Classification and hazard labeling
Literary Reference	-Chemiekaarten : 25th ed. - 2010 -Taminco Proprietary Studies

List of relevant R-phrases

- R21/22 - Harmful in contact with skin and if swallowed
- R34 - Causes burns
- S 1/2 - Keep locked up and out of the reach of children
- 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