

A large-scale fire scene is depicted, with a fire truck on the right side spraying a powerful stream of water and foam onto a massive pile of burning debris. The debris is heavily charred and blackened, with bright orange and yellow flames visible. The scene is filled with thick white smoke and steam rising from the fire. The overall atmosphere is one of intense heat and destruction.

**demsa**

**Synthetic foam  
concentrates**

[www.demsa.com.ar](http://www.demsa.com.ar)



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## AFFF 1% Demsa 201 MN - AFFF 3% Demsa 203 MN- AFFF 6% Demsa 206 MN Safety Sheet

### Product and Material Safety Data Sheet:

**AFFF 1% Demsa 201 MN - AFFF 3% Demsa 203 MN-  
AFFF 6% Demsa 206 MN.** AFFF - Aqueous Film Foaming  
Foams.

### Fire Classes:

B - USA standards & EEC standards

## 1. Identification of the Substance and of the Company Undertaking

### Product Name:

**AFFF 1% Demsa 201 MN- AFFF 3% Demsa 203 MN-  
AFFF 6% Demsa 206 MN-** Aqueous Film Forming Foam

### Product Description:

Foaming Agent Concentrate - Fire Extinguishing Agent

### Manufacturer/Supplier:

Industrias Químicas Dem S.A.

### Address:

Ruta 9 Km 79 - Campana (2804) - Buenos Aires -  
Argentina - Tel: (+54) (3489) 495 000 al 495 099  
comercial@Demsa.com.ar - www.Demsa.com.ar

Safety Data Sheet according to EC directive 2001/59/  
EC and OSHA's Hazcom Standard (29 CFR 1910.1200)

## 2. Hazards Identification

SIDE EFFECTS	
Routes of Exposure	Eye contact - Skin contact - Inhalation.
Target Organs	Eye - Skin - Respiratory System.
Health Effects - Eyes	Contact for short periods of time may cause irritation.
Health Effects - Skin	Contact may cause mild irritation.
Health Effects - Ingestion	Ingestion is not an expected route of exposure.
Health Effects - Inhalation	May irritate the respiratory tract. May cause transient cough and shortness of breath.

Excessive exposure may cause irritation of nose and

throat, irritation of eyes and mucous membranes,  
defatting of the skin, rash, skin irritation, dizziness,  
drowsiness, headache, liver and kidney damage. Persons  
with unusual (hyper) sensitivity to such chemicals may  
experience adverse reactions to this product.

Carcinogenic potential: This product and its ingredients  
are not listed as a carcinogen by NTP, OSHA, ACGIH or  
IARC.

## 3. First Aid Measures

Eyes: Immediately flood the eye with plenty of water  
for at least 15 minutes, holding the eye open. Obtain  
medical attention if soreness or redness persists.

Skin: Wash affected area with soap and water. Obtain  
medical attention if irritation persists.

Ingestion: Dilute by drinking large quantities of water  
and obtain medical attention. Do not induce vomiting.

Inhalation: Move victim to fresh air. Obtain medical  
attention immediately for any breathing difficulty.

Advice to Physicians: Treat symptomatically. Symptoms  
may be delayed.

## 4. Composition / Information on ingredients

Chemical Name	%	CAS Number	EC Number	Class
Butyl Carbitol	8 - 20	112-34-5	203-961-6	Not listed
Etilenglicol	1 - 26	107-21-1	203-473-3	Not listed
Surfactants	0,45 - 21	Mixture	Mixture	Not listed
Others	40 - 80	Mixture	Mixture	Not listed

## 5. Fire Fighting Measures

### Extinguishing Media

This preparation is used as an extinguishing agent and  
therefore is not flammable. Use extinguishing agent  
appropriate to other materials involved.

May release hazardous vapors such as oxides of nitrogen  
during a fire.

Protective Equipment for Fire-Fighting: Wear full  
protective clothing and self-contained breathing  
apparatus as appropriate for specific fire conditions.



## AFFF 1% Demsa 201 MN - AFFF 3% Demsa 203 MN- AFFF 6% Demsa 206 MN Safety Sheet

### 6. Accidental Release Measures

Contain and absorb using adequate inert materials. Transfer into suitable containers for disposal. Prevent skin and eye contact. Wear appropriate protective equipment. Prevent material from entering drains and watercourses.

### 7. Handling and Storage

Keep in its original container or appropriate end-use container. Storage area should be cool, dry, well ventilated, under cover and out of direct sunlight. The powder's integrity depends on the prevalent storage conditions. It is highly recommended to store in temperatures between 4°C to 49°C / 35°F to 120°F. Keep out from the reach of children. Use care in handling and storage.

### 8. Exposure controls and personal protection

Engineering Control Measures:

Use with adequate ventilation. There should be local procedures for the selection, training, inspection and maintenance of this equipment. When used in large volumes, use local exhaust ventilation.

Respiratory Protection:

Not normally required. When facing concentrations above the exposure limit used appropriate certified respirators.

Skin Protection - Hand and Body Protection:

Skin contact should be minimized through use of rubber or PVC gloves and suitable long sleeved clothing.

Eye Protection:

Chemical goggles or safety glasses with side shields.

Work Practice Controls:

Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material.

Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored. Wash exposed skin promptly to remove accidental splashes or contact with this material.

### 9. Physical and chemical properties

PHYSICAL STATE	LIQUID
Color	Blue
Odor	Mild Sweet
Specific Gravity (H <sub>2</sub> O=1):	1.010 - 1.055 g/cm <sup>3</sup>
PH	6.0/7.5
Boiling Range/Point (°C/°F)	95°C (203°F)
Flash Point (PMCC) (°C/F)	Not flammable
Solubility in Water	Soluble
Vapor Density (Air = 1)	Not applicable
Vapor Pressure	Not applicable
Evaporation Rate	Not applicable

### 10. Stability and reactivity

Stability: Stable under normal conditions.

Conditions to Avoid: High temperatures and direct sunlight exposure.

Materials to Avoid: Alkaline metals. Strong acids, alkalis and oxidizing agents.

Hazardous Polymerization: Will not occur.

Hazardous Decomposition Products: Oxides of carbon, nitrogen oxides, sulphur oxides.

### 11. Toxicological information

Acute Toxicity: Low order of acute toxicity. Components of the product may be absorbed into the body through the skin. Skin and eyes irritant.

Chronic Toxicity: This product is not expected to cause long term adverse health effects. Genotoxicity: This product is not expected to cause any mutagenic effects.

Reproductive & Developmental Toxicity: This product is not expected to cause adverse reproductive effects.

### 12. Ecological information

Mobility: No relevant studies identified.

## AFFF 1% Demsa 201 MN - AFFF 3% Demsa 203 MN- AFFF 6% Demsa 206 MN Safety Sheet

Persistence/Degradability: No relevant studies identified.

Bio-accumulation: No relevant studies identified.

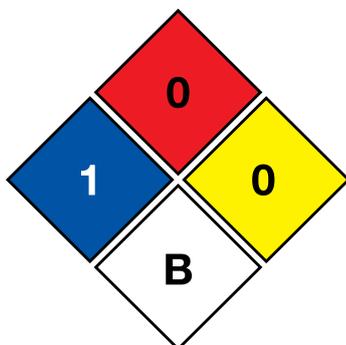
Ecotoxicity: Contains substances that can cause risk of hazardous effects to the environment when in concentrate. When in foam solution the liquid can be treated in sewage treatment plants.

### 13. Disposal considerations

Dispose of container in accordance with all applicable local and national regulations. No harm to the environment is expected from this preparation if disposed according to regulations.

### 14. Regulatory information

Label Requirements



Health (Blue): 1  
Flammability (Red): 0  
Physical Hazard (Yellow): 0  
Personal Protection (White): B

NFPA/HMIS Definitions: 0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme  
Protective Equipment: B (Safety glasses, gloves)

**WARNING: MAY CAUSE EYE AND/OR SKIN IRRITATION**

EU Label Information

Classification and labelling have been performed according to EU directives 67/548/EEC and 99/45/EC including amendments (2001/60/EC and 2006/8/EC)  
EU Risk (R) and Safety (S) Phrases -

R22 - Harmful if swallowed

R36/37/38 - Irritating to eyes, respiratory system and skin.

S2 - Keep out of the reach of children

S24/25 - Avoid contact with skin and eyes

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

S28 - After contact with skin, wash immediately with plenty of soap and water or a recognized skin cleaner

S36/37 - Wear suitable protective clothing and gloves.

S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S53 - Avoid exposure - obtain special instructions before use.

S46 - If swallowed, seek medical advice immediately and show this container or label.

USA Regulations (Federal, State) and International Chemical Registration Laws.

OSHA Hazard Communication Standard, 29 CFR 1910.1200

This product is not considered a "hazardous chemical" under this regulation but could be included in the employer's hazard communication program.

### 15. Abbreviations used in this safety sheet

CAS#: Chemical Abstracts Service Number

ACGIH: American Conference of Governmental Industrial Hygienists

OSHA: Occupational Safety and Health Administration

TLV: Threshold Limit Value

NTP: National Toxicology Program

IARC: International Agency for Research on Cancer

R: Risk

S: Safety

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Sheet Revision Date: January 5, 2015



## AFFF 1% Demsa 201 MN

### 1. General features

**AFFF 1% Demsa 201 MN** is an efficient aqueous film-forming foam concentrate, formulated from specialty fluoro chemical and hydrocarbon surfactants along with solvents.

It is intended for use as a 1% proportioned solution in fresh, salt or hard water. It may also be used and stored as a 1% premixed solution in fresh or potable water only. The correct proportioning ratio is 1 part concentrate to 99 parts of water.

Three fire suppression mechanisms are in effect when using **AFFF 1% Demsa 201 MN**.

- A) An aqueous film is formed which blocks the release of inflammable vapors.
- B) The foam blanket from which the film-forming liquid drains excludes oxygen from the fuel surface.
- C) The water content of the foam acts as a cooling agent.

### 2. Applications

**AFFF 1% Demsa 201 MN** concentrate is intended for use on Class B (US and EEC stds) non polars solvents – hydrocarbon fuel fires having low water solubility – such as various crude oils, gasolines, diesel fuels, aviation fuels, etc.

Not suitable for use on polar solvents – fuels having appreciable water solubility – such as methyl and ethyl alcohol, acetone, and methyl ethyl ketone.

It can be used with both aspirating and non-aspirating discharge devices because of the low energy required to produce the foam.

The excellent wetting characteristics make it useful in combating Class A fires as well.

The foam resulting from the concentrate can be used with Demsa's dry chemicals powders to provide even greater fire protection capability.

**AFFF 1% Demsa 201 MN** is compatible with standard carbon and stainless steel pipes or brass compounds. Alternative pipe, fittings, and valves may be used in some cases if acceptable to the customer and/or the authority having jurisdiction.

### WARNING:

**AFFF 1% Demsa 201 MN** should not be mixed with other ratio or brand AFFFs. Galvanized pipe and fittings must not be used in areas where undiluted concentrate will contact them since corrosion will result.

### 3. Toxicity

Under normal conditions of use, **AFFF 1% Demsa 201 MN** it is environmental friendly and non-toxic to humans and animals. Refer to our Demsa's AFFF Safety Data Sheet for further specifications and regulations. WARNING: skin and eye irritant

### 4. Appearance

**AFFF 1% Demsa 201 MN** is a blue liquid. Other colors are available upon request.

### 5. Packing

**AFFF 1% Demsa 201 MN** presentations are:

- 25 L Plastic pail
- 200 L Drum
- 1000 L Container (Tote)

### 6. Storage & Inspection

**AFFF 1% Demsa 201 MN** is formulated for long term storage. When stored in the packaging supplied or in equipment recommended by the manufacturer as part of the foam system and within the temperature limits specified, the shelf life is about 20-25 years.

The concentrate integrity depends on the prevalent storage conditions. It is recommended to store in temperatures between 4°C to 49°C / 35°F to 120°F.

Like any other fire suppressing agent, **AFFF 1% Demsa 201 MN**, whether in the concentrate or pre-mixed form, should be inspected periodically. An annual inspection is recommended unless unusual conditions of exposure occur.



## AFFF 1% Demsa 201 MN

### 7. Physical and Chemical Properties

PROPERTIES (20°C / 68°F)	VALUES
Nominal concentration	1%
Specific Gravity (20°C H <sub>2</sub> O=1):	1,055 g/cm <sup>3</sup>
Viscosity (20°C)	6-20 cSt
Maximum temperature of use (°C)	49
Freezing point (°C)*	0 / -10 / -20
PH (20 °C)	7,0 / 8,5
Foaming properties (Min. expansion)	>= 6 ml/g
Color	Blue
Compatible with chemical powder	Yes

\* Point of freezing: -10°C / -20°C under requirement.

### 8. Quality assurance and approvals

**AFFF 1% Demsa 201 MN** is manufactured and certified under ISO 9001:2008 international standard.

**AFFF 1% Demsa 201 MN** is produced under UL 162.

**AFFF 1% Demsa 201 MN** meets EN 1568 - ECC standards.

Product certified Under IRAM 3515/2006.

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Sheet Revision Date: January 5, 2015



## AFFF 3% Demsa 203 MN

### 1. General features

**AFFF 3% Demsa 203 MN** is an efficient aqueous film-forming foam concentrate, formulated from specialty fluoro chemical and hydrocarbon surfactants along with solvents.

It is intended for use as a 1% proportioned solution in fresh, salt or hard water. It may also be used and stored as a 1% premixed solution in fresh or potable water only. The correct proportioning ratio is 1 part concentrate to 99 parts of water.

Three fire suppression mechanisms are in effect when using **AFFF 3% Demsa 203 MN**.

- A) An aqueous film is formed which blocks the release of inflammable vapors.
- B) The foam blanket from which the film-forming liquid drains excludes oxygen from the fuel surface.
- C) The water content of the foam acts as a cooling agent.

### 2. Applications

**AFFF 3% Demsa 203 MN** concentrate is intended for use on Class B (US and EEC stds) non polars solvents – hydrocarbon fuel fires having low water solubility – such as various crude oils, gasolines, diesel fuels, aviation fuels, etc.

Not suitable for use on polar solvents – fuels having appreciable water solubility – such as methyl and ethyl alcohol, acetone, and methyl ethyl ketone.

It can be used with both aspirating and non-aspirating discharge devices because of the low energy required to produce the foam.

The excellent wetting characteristics make it useful in combating Class A fires as well.

The foam resulting from the concentrate can be used with Demsa's dry chemicals powders to provide even greater fire protection capability.

**AFFF 3% Demsa 203 MN** is compatible with standard carbon and stainless steel pipes or brass compounds. Alternative pipe, fittings, and valves may be used in some cases if acceptable to the customer and/or the authority having jurisdiction.

### WARNING:

**AFFF 3% Demsa 203 MN** should not be mixed with other ratio or brand AFFFs. Galvanized pipe and fittings must not be used in areas where undiluted concentrate will contact them since corrosion will result.

### 3. Toxicity

Under normal conditions of use, **AFFF 3% Demsa 203 MN** it is environmental friendly and non-toxic to humans and animals. Refer to our Demsa's AFFF Safety Data Sheet for further specifications and regulations. **WARNING:** skin and eye irritant

### 4. Appearance

**AFFF 3% Demsa 203 MN** is a blue liquid. Other colors are available upon request.

### 5. Packing

**AFFF 3% Demsa 203 MN** presentations are:

- 25 L Plastic pail
- 200 L Drum
- 1000 L Container (Tote)

### 6. Storage & Inspection

**AFFF 3% Demsa 203 MN** is formulated for long term storage. When stored in the packaging supplied or in equipment recommended by the manufacturer as part of the foam system and within the temperature limits specified, the shelf life is about 20-25 years.

The concentrate integrity depends on the prevalent storage conditions. It is recommended to store in temperatures between 4°C to 49°C / 35°F to 120°F.

Like any other fire suppressing agent, **AFFF 3% Demsa 203 MN**, whether in the concentrate or pre-mixed form, should be inspected periodically. An annual inspection is recommended unless unusual conditions of exposure occur.

## AFFF 3% Demsa 203 MN

### 7. Physical and Chemical Properties

PROPERTIES (20°C / 68°F)	VALUES
Nominal concentration	3%
Specific Gravity (20°C H <sub>2</sub> O=1):	1,025 g/cm <sup>3</sup>
Viscosity (20°C)	4-6 cSt
Maximum temperature of use (°C)	49
Freezing point (°C)*	0 / -10 / -20
PH (20 °C)	7,0 / 8,5
Foaming properties (Min. expansion)	>= 6 ml/g
Color	Blue
Compatible with chemical powder	Yes

\* Point of freezing: -10°C / -20°C under requirement.

### 8. Quality assurance and approvals

**AFFF 3% Demsa 203 MN** is manufactured and certified under ISO 9001:2008 international standard.

**AFFF 3% Demsa 203 MN** is produced under UL 162.

**AFFF 3% Demsa 203 MN** meets EN 1568 - ECC standards.

Product certified Under IRAM 3515/2006.

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Sheet Revision Date: January 5, 2015



## AFFF 6% Demsa 206 MN

### 1. General features

**AFFF 6% Demsa 206 MN** is an efficient aqueous film-forming foam concentrate, formulated from specialty fluoro chemical and hydrocarbon surfactants along with solvents.

It is intended for use as a 1% proportioned solution in fresh, salt or hard water. It may also be used and stored as a 1% premixed solution in fresh or potable water only. The correct proportioning ratio is 1 part concentrate to 99 parts of water.

Three fire suppression mechanisms are in effect when using **AFFF 6% Demsa 206 MN**.

- A) An aqueous film is formed which blocks the release of inflammable vapors.
- B) The foam blanket from which the film-forming liquid drains excludes oxygen from the fuel surface.
- C) The water content of the foam acts as a cooling agent.

### 2. Applications

**AFFF 6% Demsa 206 MN** concentrate is intended for use on Class B (US and EEC stds) non polars solvents – hydrocarbon fuel fires having low water solubility – such as various crude oils, gasolines, diesel fuels, aviation fuels, etc.

Not suitable for use on polar solvents – fuels having appreciable water solubility – such as methyl and ethyl alcohol, acetone, and methyl ethyl ketone.

It can be used with both aspirating and non-aspirating discharge devices because of the low energy required to produce the foam.

The excellent wetting characteristics make it useful in combating Class A fires as well.

The foam resulting from the concentrate can be used with Demsa's dry chemicals powders to provide even greater fire protection capability.

**AFFF 6% Demsa 206 MN** is compatible with standard carbon and stainless steel pipes or brass compounds. Alternative pipe, fittings, and valves may be used in some cases if acceptable to the customer and/or the authority having jurisdiction.

### WARNING:

**AFFF 6% Demsa 206 MN** should not be mixed with other ratio or brand AFFFs. Galvanized pipe and fittings must not be used in areas where undiluted concentrate will contact them since corrosion will result.

### 3. Toxicity

Under normal conditions of use, **AFFF 6% Demsa 206 MN** it is environmental friendly and non-toxic to humans and animals. Refer to our Demsa's AFFF Safety Data Sheet for further specifications and regulations. WARNING: skin and eye irritant

### 4. Appearance

**AFFF 6% Demsa 206 MN** is a blue liquid. Other colors are available upon request.

### 5. Packing

**AFFF 6% Demsa 206 MN** presentations are:

- 25 L Plastic pail
- 200 L Drum
- 1000 L Container (Tote)

### 6. Storage & Inspection

**AFFF 6% Demsa 206 MN** is formulated for long term storage. When stored in the packaging supplied or in equipment recommended by the manufacturer as part of the foam system and within the temperature limits specified, the shelf life is about 20-25 years.

The concentrate integrity depends on the prevalent storage conditions. It is recommended to store in temperatures between 4°C to 49°C / 35°F to 120°F.

Like any other fire suppressing agent, **AFFF 6% Demsa 206 MN**, whether in the concentrate or pre-mixed form, should be inspected periodically. An annual inspection is recommended unless unusual conditions of exposure occur.

## AFFF 6% Demsa 206 MN

### 7. Physical and Chemical Properties

PROPERTIES (20°C / 68°F)	VALUES
Nominal concentration	6%
Specific Gravity (20°C H <sub>2</sub> O=1):	1,010 g/cm <sup>3</sup>
Viscosity (20°C)	2-4 cSt
Maximum temperature of use (°C)	49
Freezing point (°C)*	0 / -10 / -20
PH (20 °C)	7,0 / 8,5
Foaming properties (Min. expansion)	>= 6 ml/g
Color	Blue
Compatible with chemical powder	Yes

\* Point of freezing: -10°C / -20°C under requirement.

### 8. Quality assurance and approvals

**AFFF 6% Demsa 206 MN** is manufactured and certified under ISO 9001:2008 international standard.

**AFFF 6% Demsa 206 MN** is produced under UL 162.

**AFFF 6% Demsa 206 MN** meets EN 1568 - ECC standards.

Product certified Under IRAM 3515/2006.

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Sheet Revision Date: January 5, 2015

## AR-AFFF 3/3 Demsa 233 MN - AR-AFFF 3/6 Demsa 236 MN

### Safety Sheet

#### Product and Material Safety Data Sheet:

**AR-AFFF 3/3 Demsa 233 MN - AR-AFFF 3/6 Demsa 236 MN.** AR-AFFF - Alcohol Resistant Aqueous Film Foaming Foams Concentrates

#### Fire Classes:

B - USA standards & EEC standards

### 1. Identification of the Substance and of the Company Undertaking

#### Product Name:

**AR-AFFF 3/3 Demsa 233 MN - AR-AFFF 3/6 Demsa 236 MN** Alcohol Resistant Aqueous Film Forming Foam

#### Product Description:

Foaming Agent Concentrate - Fire Extinguishing Agent

#### Manufacturer/Supplier:

Industrias Químicas Dem S.A.

#### Address:

Ruta 9 Km 79 - Campana (2804) - Buenos Aires - Argentina - Tel: (+54) (3489) 495 000 al 495 099  
comercial@Demsa.com.ar - www.Demsa.com.ar

Safety Data Sheet according to EC directive 2001/59/EC and OSHA's Hazcom Standard (29 CFR 1910.1200)

### 2. Hazards Identification

SIDE EFFECTS	
Routes of Exposure	Eye contact - Skin contact - Inhalation.
Target Organs	Eye - Skin - Respiratory System.
Health Effects - Eyes	Contact for short periods of time may cause irritation.
Health Effects - Skin	Contact may cause mild irritation.
Health Effects - Ingestion	Ingestion is not an expected route of exposure.
Health Effects - Inhalation	May irritate the respiratory tract. May cause transient cough and shortness of breath.

Excessive exposure may cause irritation of nose and throat, irritation of eyes and mucous membranes, defatting of the skin, rash, skin irritation, dizziness, drowsiness, headache, liver and kidney damage. Persons with unusual (hyper) sensitivity to such chemicals may experience adverse reactions to this product.

Carcinogenic potential: This product and its ingredients are not listed as a carcinogen by NTP, OSHA, ACGIH or IARC.

### 3. First Aid Measures

**Eyes:** Immediately flood the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.

**Skin:** Wash affected area with soap and water. Obtain medical attention if irritation persists.

**Ingestion:** Dilute by drinking large quantities of water and obtain medical attention. Do not induce vomiting.

**Inhalation:** Move victim to fresh air. Obtain medical attention immediately for any breathing difficulty.

**Advice to Physicians:** Treat symptomatically. Symptoms may be delayed.

### 4. Composition / Information on ingredients

Chemical name	%	CAS Number	EC Number	Clase
Butyl Carbitol	1 - 8	112-34-5	203-961-6	Not listed
Etilenglicol	1 - 26	107-21-1	203-473-3	Not listed
Surfactants	2 - 8	Mixture	Not listed	Not listed
Others	48 - 73	Mixture	No espec.	Not listed

### 5. Fire Fighting Measures

#### Extinguishing Media

This preparation is used as an extinguishing agent and therefore is not flammable. Use extinguishing agent appropriate to other materials involved.

May release hazardous vapors such as oxides of nitrogen during a fire.

Protective Equipment for Fire-Fighting: Wear full protective clothing and self-contained breathing apparatus as appropriate for specific fire conditions.

## AR-AFFF 3/3 Demsa 233 MN - AR-AFFF 3/6 Demsa 236 MN

### Safety Sheet

#### 6. Accidental Release Measures

Contain and absorb using adequate inert materials. Transfer into suitable containers for disposal. Prevent skin and eye contact. Wear appropriate protective equipment. Prevent material from entering drains and watercourses.

#### 7. Handling and Storage

Keep in its original container or appropriate end-use container. Storage area should be cool, dry, well ventilated, under cover and out of direct sunlight. The powder's integrity depends on the prevalent storage conditions. It is highly recommended to store in temperatures between 4°C to 49°C / 35°F to 120°F. Keep out from the reach of children. Use care in handling and storage.

#### 8. Exposure controls and personal protection

Engineering Control Measures:

Use with adequate ventilation. There should be local procedures for the selection, training, inspection and maintenance of this equipment. When used in large volumes, use local exhaust ventilation.

Respiratory Protection:

Not normally required. When facing concentrations above the exposure limit used appropriate certified respirators.

Skin Protection - Hand and Body Protection:

Skin contact should be minimized through use of rubber or PVC gloves and suitable long sleeved clothing.

Eye Protection:

Chemical goggles or safety glasses with side shields.

Work Practice Controls:

Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material:

Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored. Wash exposed skin promptly to remove accidental splashes or contact with this material.

#### 9. Physical and chemical properties

PHYSICAL STATE	LIQUID
Color	Rojo
Odor	Mild Sweet
Specific Gravity (20°C H <sub>2</sub> O=1):	1.045 g/cm <sup>3</sup>
PH	7.0 / 8.5
Boiling Range/Point (°C/°F)	95°C (203°F)
Flash Point (PMCC) (°C/F)	Not Flammable
Solubility in Water	Soluble
Vapor Density (Air = 1)	Not applicable
Vapor Pressure	Not applicable
Evaporation Rate	<1

#### 10. Stability and reactivity

Stability: Stable under normal conditions.

Conditions to Avoid: High temperatures and direct sunlight exposure.

Materials to Avoid: Alkaline metals. Strong acids, alkalis and oxidizing agents.

Hazardous Polymerization: Will not occur.

Hazardous Decomposition Products: Oxides of carbon, nitrogen oxides, sulphur oxides.

#### 11. Toxicological information

Acute Toxicity: Low order of acute toxicity. Components of the product may be absorbed into the body through the skin. Skin and eyes irritant.

Chronic Toxicity: This product is not expected to cause long term adverse health effects. Genotoxicity: This product is not expected to cause any mutagenic effects.

Reproductive & Developmental Toxicity: This product is not expected to cause adverse reproductive effects.

## AR-AFFF 3/3 Demsa 233 MN - AR-AFFF 3/6 Demsa 236 MN

### Safety Sheet

#### 12. Ecological information

Mobility: No relevant studies identified.

Persistence/Degradability: No relevant studies identified.

Bio-accumulation: No relevant studies identified.

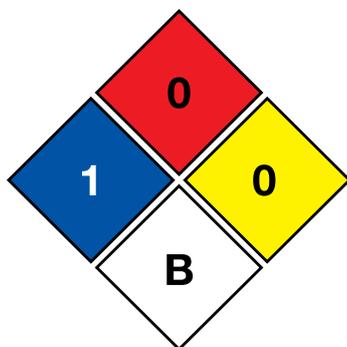
Ecotoxicity: Contains substances that can cause risk of hazardous effects to the environment when in concentrate. When in foam solution the liquid can be treated in sewage treatment plants.

#### 13. Disposal considerations

Dispose of container in accordance with all applicable local and national regulations. No harm to the environment is expected from this preparation if disposed according to regulations.

#### 14. Regulatory information

Label Requirements



Health (Blue): 1

Flammability (Red): 0

Physical Hazard (Yellow): 0

Personal Protection (White): B

NFPA/HMIS Definitions: 0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme

Protective Equipment: B (Safety glasses, gloves)

#### WARNING: MAY CAUSE EYE AND/OR SKIN IRRITATION

EU Label Information

Classification and labelling have been performed according to EU directives 67/548/EEC and 99/45/EC including amendments (2001/60/EC and 2006/8/EC) EU Risk (R) and Safety (S) Phrases -

R22 - Harmful if swallowed

R36/37/38 - Irritating to eyes, respiratory system and skin.

S2 - Keep out of the reach of children

S24/25 - Avoid contact with skin and eyes

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

S28 - After contact with skin, wash immediately with plenty of soap and water or a recognized skin cleaner

S36/37 - Wear suitable protective clothing and gloves.

S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S53 - Avoid exposure - obtain special instructions before use.

S46 - If swallowed, seek medical advice immediately and show this container or label.

USA Regulations (Federal, State) and International Chemical Registration Laws.

OSHA Hazard Communication Standard, 29 CFR 1910.1200

This product is not considered a "hazardous chemical" under this regulation but could be included in the employer's hazard communication program.



## AR-AFFF 3/3 Demsa 233 MN - AR-AFFF 3/6 Demsa 236 MN

### Safety Sheet

#### 15. Abbreviations used in this safety sheet

CAS#: Chemical Abstracts Service Number  
ACGIH: American Conference of Governmental  
Industrial Hygienists  
OSHA: Occupational Safety and Health Administration  
TLV: Threshold Limit Value  
NTP: National Toxicology Program  
IARC: International Agency for Research on Cancer  
R: Risk  
S: Safety

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*Sheet Revision Date: January 5, 2015*



## AR-AFFF 3/3 Demsa 233 MN

### 1. General Features

**AR-AFFF 3/3 Demsa 233 MN** is an efficient aqueous film-forming foam concentrate, formulated from special fluoro chemicals and hydrocarbon surfactants, a high molecular weight polymer, and solvents.

It is intended for use as a 1% (1 part concentrate to 99 parts of water) proportioned solution on hydrocarbon fuels and as a 3% (3 parts of concentrate to 97 parts of water) proportioned solution on polar solvent fuels in fresh, salt, or hard water.

Three fire suppression mechanisms are in effect when using **AR-AFFF 3/3 Demsa 233 MN**:

- A) An aqueous film is formed in the case of a conventional hydrocarbon fuel, or a polymeric membrane in the case of a polar solvent fuel. This film or membrane forms a barrier to help prevent the release of inflammable fuel vapors.
- B) Regardless the fuel type a foam blanket is formed which excludes oxygen from the fuel surface.
- C) The water content of the foam acts as a cooling agent.

### 2. Applications

**AR-AFFF 3/3 Demsa 233 MN** can be used on either conventional Class B fuels (crude oils, gasolines, diesel fuels, aviation fuels, etc.) or polar solvent-type Class B fuels (methyl and ethyl alcohol, acetone, and methyl ethyl ketone). The excellent wetting characteristics make it useful in fighting Class A fires as well.

The foam resulting from the concentrate can be used with Demsa's dry chemicals powders to provide even greater fire protection capability.

**AR-AFFF 3/3 Demsa 233 MN** is compatible with standard carbon and stainless steel pipes or brass compounds. Alternative pipe, fittings, and valves may be used in some cases if acceptable to the customer and/or the authority having jurisdiction

**WARNING: AR-AFFF 3/3 Demsa 233 MN** should not be mixed with other ratio or brand **AFFFs** or **AR-AFFFs**. Galvanized pipe and fittings must not be used in areas where undiluted concentrate will contact them since corrosion will result.

### 3. Toxicity

Under normal conditions of use, **AR-AFFF 3/3 Demsa 233 MN** is environmental friendly and non-toxic to humans and animals. Refer to our **Demsa AR-AFFF** Safety Data Sheet for further specifications and regulations. **WARNING:** skin and eye irritant.

### 4. Appearance

**AR-AFFF 3/3 Demsa 233 MN** is a red liquid. Other colors are available upon request.

### 5. Packing

**AR-AFFF 3/3 Demsa 233 MN** presentations are:

- 25 L Plastic pail
- 200 L Drum
- 1000 L Container (Tote)

### 6. Storage & Inspection

**AR-AFFF 3/3 Demsa 233 MN** is formulated for long term storage. When stored in the packaging supplied or in equipment recommended by the manufacturer as part of the foam system and within the temperature limits specified, the shelf life is about 20-25 years.

The concentrate integrity depends on the prevalent storage conditions. It is recommended to store in temperatures between 4°C to 49°C / 35°F to 120°F.

Like any other fire suppressing agent, **Demsa AR-AFFF 1/3**, whether in the concentrate or pre-mixed form, should be inspected periodically. An annual inspection is recommended unless unusual conditions of exposure occur.

## AR-AFFF 3/3 Demsa 233 MN

### 7. Physical and Chemical Properties

PROPERTIES (20°C / 68°F)	VALUES
Nominal concentration	3% on no polar fuel
	3% polar fuel
Specific gravity (20°C)	1,045 g/cm <sup>3</sup>
Viscosity (20°C)	< 3000 cp
Maximum temperature of use (°C)	49
Freezing point (°C)	0 / -10 / -20
PH (20 °C)	7,0 / 8,5
Foaming properties Min. expansion	>= 6 ml/g
Color	Red
Compatible with chemical powder	Yes

### 8. Quality assurance and approvals

**AR-AFFF 3/3 Demsa 233 MN** is manufactured and certified under ISO 9001:2008 international standard.

**AR-AFFF 3/3 Demsa 233 MN** is produced under UL 162.

**AR-AFFF 3/3 Demsa 233 MN** meets EN 1568 - ECC standards.

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Sheet Revision Date: January 5, 2015



## AR-AFFF 3/6 Demsa 236 MN

### 1. General Features

**AR-AFFF 3/3 Demsa 233 MN** is an efficient aqueous film-forming foam concentrate, formulated from special fluoro chemicals and hydrocarbon surfactants, a high molecular weight polymer, and solvents.

It is intended for use as a 1% (1 part concentrate to 99 parts of water) proportioned solution on hydrocarbon fuels and as a 3% (3 parts of concentrate to 97 parts of water) proportioned solution on polar solvent fuels in fresh, salt, or hard water.

Three fire suppression mechanisms are in effect when using **AR-AFFF 3/3 Demsa 233 MN**:

- A) An aqueous film is formed in the case of a conventional hydrocarbon fuel, or a polymeric membrane in the case of a polar solvent fuel. This film or membrane forms a barrier to help prevent the release of inflammable fuel vapors.
- B) Regardless the fuel type a foam blanket is formed which excludes oxygen from the fuel surface.
- C) The water content of the foam acts as a cooling agent.

### 2. Applications

**AR-AFFF 3/3 Demsa 233 MN** can be used on either conventional Class B fuels (crude oils, gasolines, diesel fuels, aviation fuels, etc.) or polar solvent-type Class B fuels (methyl and ethyl alcohol, acetone, and methyl ethyl ketone). The excellent wetting characteristics make it useful in fighting Class A fires as well.

The foam resulting from the concentrate can be used with Demsa's dry chemicals powders to provide even greater fire protection capability.

**AR-AFFF 3/3 Demsa 233 MN** is compatible with standard carbon and stainless steel pipes or brass compounds. Alternative pipe, fittings, and valves may be used in some cases if acceptable to the customer and/or the authority having jurisdiction

**WARNING: AR-AFFF 3/3 Demsa 233 MN** should not be mixed with other ratio or brand **AFFFs** or **AR-AFFFs**. Galvanized pipe and fittings must not be used in areas where undiluted concentrate will contact them since corrosion will result.

### 3. Toxicity

Under normal conditions of use, **AR-AFFF 3/3 Demsa 233 MN** is environmental friendly and non-toxic to humans and animals. Refer to our **Demsa AR-AFFF** Safety Data Sheet for further specifications and regulations. **WARNING:** skin and eye irritant.

### 4. Appearance

**AR-AFFF 3/3 Demsa 233 MN** is a red liquid. Other colors are available upon request.

### 5. Packing

**AR-AFFF 3/3 Demsa 233 MN** presentations are:

- 25 L Plastic pail
- 200 L Drum
- 1000 L Container (Tote)

### 6. Storage & Inspection

**AR-AFFF 3/3 Demsa 233 MN** is formulated for long term storage. When stored in the packaging supplied or in equipment recommended by the manufacturer as part of the foam system and within the temperature limits specified, the shelf life is about 20-25 years.

The concentrate integrity depends on the prevalent storage conditions. It is recommended to store in temperatures between 4°C to 49°C / 35°F to 120°F.

Like any other fire suppressing agent, **Demsa AR-AFFF 1/3**, whether in the concentrate or pre-mixed form, should be inspected periodically. An annual inspection is recommended unless unusual conditions of exposure occur.

## AR-AFFF 3/6 Demsa 236 MN

### 7. Physical and Chemical Properties

PROPERTIES (20°C / 68°F)	VALUES
Nominal concentration	3% on no polar fuel
	6% polar fuel
Specific gravity (20°C)	1,045 g/cm <sup>3</sup>
Viscosity (20°C)	< 3000 cp
Maximum temperature of use (°C)	49
Freezing point (°C)	0 / -10 / -20
PH (20 °C)	7,0 / 8,5
Foaming properties Min. expansion	>= 6 ml/g
Color	Red
Compatible with chemical powder	Yes

### 8. Quality assurance and approvals

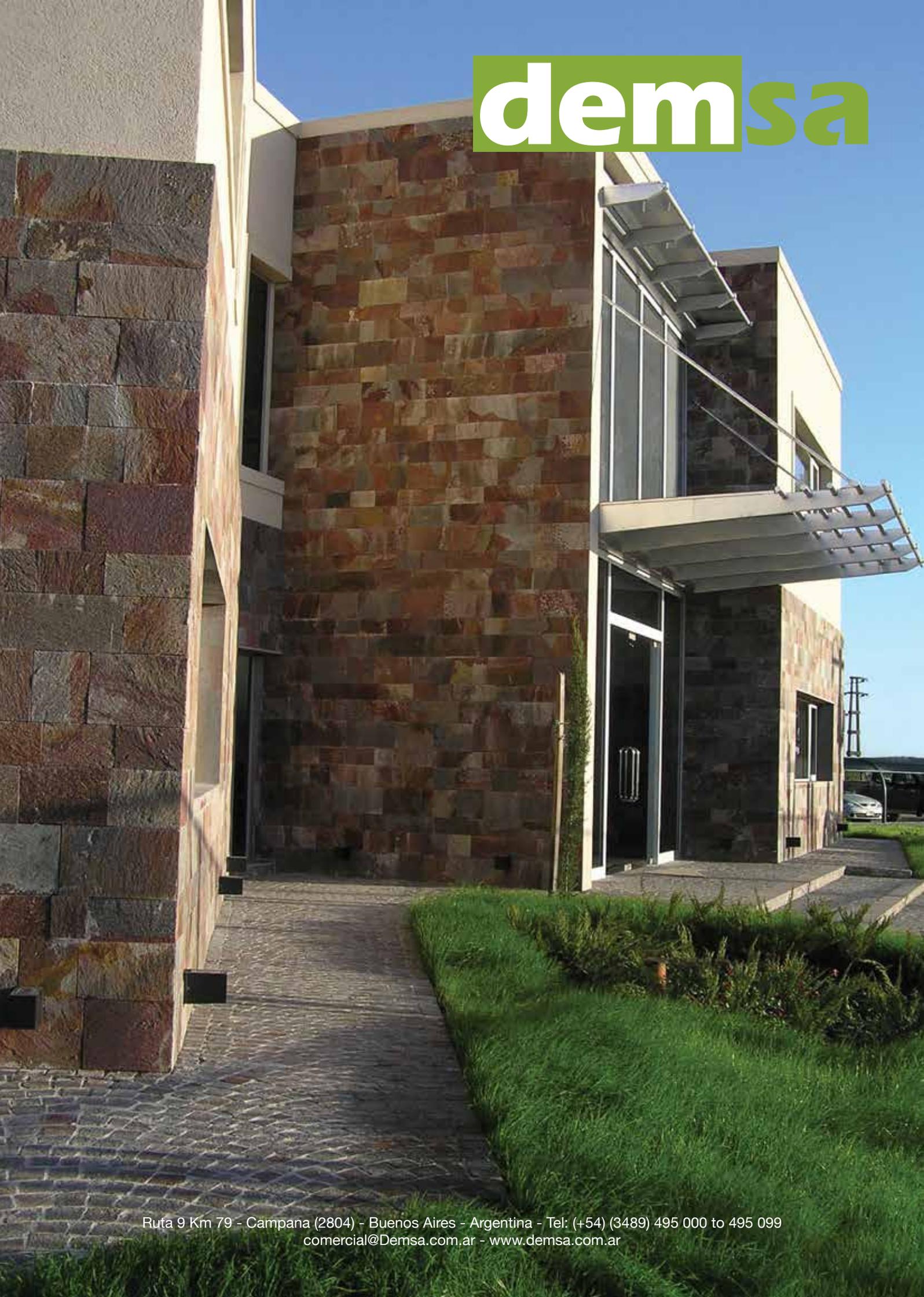
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The image shows a modern building with a prominent stone facade. The stone is arranged in a grid pattern with varying shades of brown, tan, and grey. To the right, there is a balcony with a glass railing and a metal canopy. The building is set against a clear blue sky. In the foreground, there is a paved walkway and some greenery.

# demsa