

Polymers Technical Data Sheet







**Products that enrich the world** Chemicals | Polymers | Fertilisers



# **CONTENTS**

03 | INTRODUCTION

07 | LOTRÈNE® LDPE

15 | LOTRÈNE® LLDPE

19 | LOTRÈNE® MDPE/ HDPE

27 | STORAGE, SAFETY AND FOOD CONTACT & TECHNICAL DISCLAIMER

28 | MUNTAJAT B.V. GLOBAL NETWORK

















Aligned with Qatar National
Vision 2030's aim to develop
a competitive and diversified
economy, Muntajat serves as a
gateway for the State of Qatar's
chemical and petrochemical
industries, by consolidating
marketing and distribution efforts
into a single entity to meet the
needs of customers worldwide.

# **INTRODUCTION**

#### **About Muntajat**

Muntajat, (Qatar Chemical and Petrochemical Marketing and Distribution Company) Q.J.S.C. is a state-owned company established in 2012 in the world's emerging chemicals and petrochemicals hub, Qatar. Muntajat is the gateway to Qatar's exports of over 10 million tonnes of chemicals and petrochemicals products. The company markets, sells and distributes 100% of the State's downstream exports to customers in more than 120 countries.

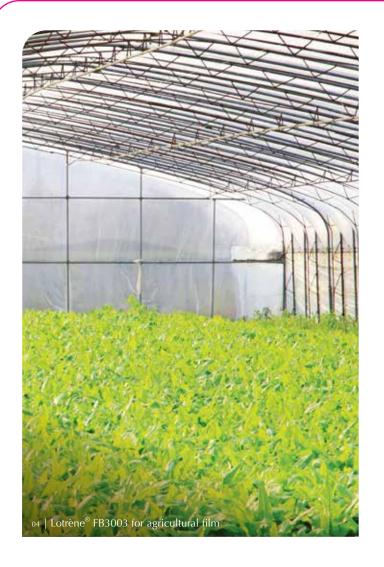
The company aims to represent, serve and promote the State of Qatar's chemicals, polymers and fertilisers and maximise value for its stakeholders by providing the world-class products and services customers need to maintain their competitive advantage.

Muntajat is working towards achieving Qatar's 2030 Vision by contributing to social, human, economic and environmental development and the creation of a diversified knowledge-based economy.

The company builds on more than 40 years of excellence by Qatar's producing entities. It is adding new value to the supply chain through reduced lead times and enhanced customer experience while retaining continuity of supply and world-class quality that customers demand.

Muntajat is currently developing a strong footprint across the globe, through its international marketing network, Muntajat BV, which is headquartered in the Netherlands and spread in 18 countries around the world.

With vast resources, world-class products and a dedicated team of experts, Muntajat guarantees reliability and quality to its global customers.













Muntajat is the sole distributor of Low Density Polyethylene (LDPE) produced in Qatar by QAPCO.

Established in 1974, QAPCO commenced commercial production in 1981. It is owned by Indutries Qatar (80%) and Total Petrochemicals (20%).

QAPCO manufatcturing facilities consist of an ethylene plant with a capacity of 720,000 MTPA (though producion achieved is over 800,000 TA), three LDPE plants with total capacity of 700,000 MTPA.

QAPCO manufactures a wide range of LDPE grades suitable to all thermoplastics processing techniques with applications such as packaging films, agricultural film, extrusion coating, lamination film, high clarity film, injection molding, foamed and other products having wide usage all over the world.

Lotrène<sup>®</sup> LDPE products meet high quality performance and consistency and also comply with most food contact regulations (FDA and European regulations).

All QAPCO Lotrène<sup>®</sup> products are complying with REACH Regulation 1907/2006/EC. The aims of this regulation are to improve the protection of human health and the environment through better and earlier identification of the intrinsic properties of chemical substances.

Produced by: Qatar Petrochemical Company (QAPCO) Q.S.C.





					(LDFL)
GRADE	FB3003	FE3000	FB5026	FE8000	FE8004
MFI (dg/min) (target, ASTM D1238)	0.30	0.30	0.60	0.80	0.80
Density (target, ASTM D1505/D792*)	0.920	0.923*	0.920	0.923*	0.923*
Process	Autoclave	Tubular	Autoclave	Tubular	Tubular
Slip (Erucamide) (target, ppm)	No	No	300	No	300
Antiblock (target, ppm)	No	No	No	No	No
Antioxidants	No	No	No	No	No
Applications	Heavy duty bags, industrial shrink film, shrink film for pallets shrink, construction film, agricultural film, drip irrigation pipe, small blow moulded bottles	Heavy duty bags, industrial shrink film, construction film, agricultural film	Milk bags (pouches), shopping bags, medium duty carrier bags, industrial liners, shrink wrap for light and medium duty	Shrink wrap film for light and medium duties, shopping bags, lamination film	Shrink wrap film for light and medium duties, shopping bags, bakery bags, milk pouches, lamination film
Product Description	Lotrène® FB3003 has a molecular structure allowing to produce films with excellent mechanical properties, outstanding shrink properties and excellent bubble stability. It has a good stress cracking resistance. Lotrène® FB3003 is mainly recommended for heavy duty film applications.	Lotrène® FE3000 is offering high strength combined with excellent optical properties, very good shrink properties and good mechanical properties and is mainly recommended for heavy duty film applications.	Lotrène® FB5026 is mainly recommended for medium duty film applications. It contains additive that gives good slip properties. Films produced with Lotrène® FB5026 are strong, sufficiently rigid for automatic packaging machines, suitable for shrink wrapping and have good dimensional stability.	Films produced with Lotrène® FE8000 are sufficiently rigid for automatic packaging machines, suitable for shrink wrapping and have good optical properties.  Lotrène® FE8000 mainly recommended for light and medium duty film applications with good optical properties and medium rigidity.	Films produced with Lotrène® FE8004 are sufficiently rigid for automatic packaging machines, suitable for shrink wrapping and have good optical properties. Lotrène® FE8004 is mainly recommended for light and medium duty film applications with good optical properties and medium rigidity.













GRADE	FD0270	FD0274	FD0374	FD0474
MFI (dg/min) (target, ASTM D1238)	2.4	2.4	3.5	4.0
Density (target, ASTM D1505/D792*)	0.923*	0.923*	0.923	0.923
Process	Tubular	Tubular	Tubular	Tubular
Slip (Erucamide) (target, ppm)	No	600	600	600
Antiblock (target, ppm)	No	900	900	900
Antioxidants	No	Yes	Yes	Yes
Applications	High clarity bags, thin shrink film, lamination film, foamed products.	Thin transparency film, thin shrink film, laundry film, foam products, food packaging, deep freeze, lamination film.	Film for light duty packaging, laundry film, display film, bakery bags.	High-clarity film for packaging of Luxury goods, flowers, clothing, frozen food, laundry film.
Product Description	The molecular structure of Lotrène® FD0270 makes it possible to produce very thin, clear and glossy films.  Lotrène® FD0270 is mainly recommended for the extrusion of thin film for light and medium duty applications.	The molecular structure of Lotrène® FD0274 makes it possible to produce very thin, clear and glossy films.  Lotrène® FD0274 is mainly recommended for the extrusion of thin film for light and medium duty applications.	Lotrène® FD0374 provides excellent clarity, gloss and haze. I also shows excellent processability and draw down. Lotrène® FD0374 is mainly recommended for the extrusion of very thin film for light duty applications.	The molecular structure of Lotrène® FD0474 provides excellent clarity, high gloss and low haze films.  This structure also leads to excellent processability. Lotrène® FD0474 is mainly recommended for the extrusion of very high clarity blown and cast films.













GRADE	LA0710	MG20	MG70
MFI (dg/min) (target, ASTM D1238)	8	20	70
Density (target, ASTM D1505/D792*)	0.918	0.918	0.918
Process	Autoclave	Autoclave	Autoclave
Slip (Erucamide) (target, ppm) Antiblock	No	No	No
(target, ppm)	No	No	No
Antioxidants	No	No	No
Applications			
Product Description	Coating and/or lamination of: paper, paper board, aluminum, cellophane film, photographic paper, polymer film, tarpaulin, paper / aluminum, pe film / aluminum.	Flexible household articles, lids & caps, flower pots, masterbatches.	Artificial flowers, metal coating, coating of textiles, masterbatches
	The structure of Lotrène® LA0710 allows it to be used for thin gauge coating at very high speeds onto various substrates. Lotrène® LA0710 has good mechanical properties, low neck-in and excellent heat sealability. It has also a good adhesion to both porous and non-porous substrates.  Lotrène® LA0710 is mainly recommended for the extrusion coating at high speed. It contains no additives.	Lotrène® MG20 is an injection moulding grade mainly recommended for the injection moulding of thin and flexible items. The high melt flow index of Lotrène® MG20 leads to good flow properties. It is ideal for filling the cavities of the complex moulds with high surface gloss.	Lotrène® MG70 is an injection moulding grade mainly recommended for the injection of thin and flexible items and the preparation of masterbatches. The high melt flow index of Lotrène® MG70 leads to excellent flowability and processability. The items produced from this grade possess high flexibility and glossy surface.

















Operated by QAPCO

Muntajat is the sole distributor of Linear Low Density Polyethylene (LLDPE) produced in Qatar by Qatofin.

Established by a joint venture agreement between Qatar Petrochemical Company (QAPCO) (63%), Total Petrochemicals (36%) and Qatar Petroleum (1%), the Qatofin LLDPE plant is operated by the Qatar Petrochemical Company (QAPCO) and produces around 540,000 Metric Tonnes per year (MTPA).

Qatofin's linear low density polyethylene resins are produced through butene's copolymerisation. In packaging applications it offers good aesthetics, printability, strength and processing on today's high speed lines for use as film. In cost sensitive packaging markets, Qatofin's LLDPE resins can improve mechanical and welding efficiencies, including products for heavy duty bags, produce bags and agricultural bags. Resins exhibit high gloss and low odour; they are suitable for food packaging applications.

Lotrène<sup>®</sup> LLDPE products meet high quality performance and consistency and also complies with most food contact regulations (FDA and European regulations).

All Qatofin Lotrène® products are complying with REACH Regulation 1907/2006/EC. The aims of this regulation are to improve the protection of human health and the environment through better and earlier identification of the intrinsic properties of chemical substances.

Produced by: Qatofin Company Ltd.



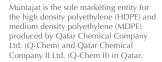


GRADE	Q1018N	Q1018H	Q2018N	Q2018H	Q2018C
MFI (dg/min) (target, ASTM D1238)	1.0	1.0	2.0	2.0	2.0
Density (target, D792*)	0.918*	0.918*	0.918*	0.918*	0.918*
Process	Gas phase	Gas phase	Gas phase	Gas phase	Gas phase
Co-monomer	Butene	Butene	Butene	Butene	Butene
Slip (Erucamide) (target, ppm)	0	1500	0	1500	0
Antiblock (target, ppm)	0	3200	0	3200	0
Antioxidants	Yes (blown film)	Yes (blown film)	Yes (blown film)	Yes (blown film)	Yes (cast film)
Applications	Consumer, agricultural, industrial, food or hygiene packaging, for example: collation shrink, liners, FFS bags, heavy duty sacks, refuse, tunnel films, mulching film.		Consumer, industrial, food or hygiene packaging such as freezer film, bread bags, shoppers and bags as well as lamination film and multilayer packaging film.		Cast stretch film for melt index 2.0 market. Consumer, industrial, food or hygiene packaging as well as non-packaging applications like agricultural films e.g. mulching films.
Product Description  (* density measured on base resin)	Lotrène® Q1018 Series are Linear Low Density Polyethylene resins produced in a gas phase reactor using Butene (C4) co-monomer. They are designed for blown film applications and can be used in pure form as well as blended with other PE resins, such as LDPE or HDPE and mPE resins for mono extrusion or co-extrusion process to modify film properties.		Lotrène® Q2018 Series are Linear Low Density Polyethylene resins produced in a gas phase reactor using Butene (C4) co-monomer. They are designed for film applications and can be used in pure form as well as blended with other PE resins, such as LDPE or HDPE and mPE resins for mono extrusion or co-extrusion process to modify film properties.		Lotrène® Q2018C is a Linear Low Density Polyethylene resins produced in a gas phase reactor using Butene (C4) co-monomer. Lotrène® Q2018C can be processed at optimal output rates with moderate extrusion pressure, good web stability and gauge control on cast film machines designed for LLDPE. Lotrène® Q2018C can advantageously be blended with LDPE or other PE resins used in cast film mono extrusion or co-extrusion to improve film properties.









Q-Chem and Q-Chem II are Qatari companies owned by joint venture partners Mesaieed Petrochemical Holding Company Q.S.C. (MPHC) 49%, Chevron Phillips Chemical International Qatar Holdings LLC 49% and Qatar Petroleum (QP) 2%.

Located in Mesaieed Industrial City, Q-Chem, which began commercial operations in 2004, is a world-class integrated petrochemical complex with annual original production capacity of 453,000 metric tons (MT) polyethylene (MDPE/HDPE) and 47,000MT of 1-hexene.

Constructed adjacent to the Q-Chem plant, Q-Chem Il's facility began operation in 2010 and includes a 350,000 MT polyethylene (MDPE/HDPE) plant and the first full-range normal alpha olefins (NAO) unit in the State of Qatar with an annual capacity of 345,000 MT. Both the polyethylene and NAO plants utilize state-of-the-art proprietary technology provided by Chevron Phillips Chemical, a major producer of chemicals and plastics.

Marketed by Muntajat under the brand name Lotrène® effective 1st December 2015, the high-quality Q-Chem and Q-Chem II HDPE and MDPE products are widely used for various thermoplastic techniques, offering an extensive range of applications such as blown film, blow moulding, pipe, and geomembranes.





# **BLOWN FILM PRODUCTS**



GRADE	Q TR-131	Q TR-144
Density (target, ASTM D1505)	0.938	0.946
MI-2, (dg/min), (target, ASTM D1238)	0.2	0.18
HLMI, (dg/min), (target, ASTM D1238)	15	15
Processing technique	Blown Film	Blown Film
Applications	Industrial Liners, Grocery Sacks, Bags and Pack- aging Films	Industrial Liners, Bags and Packaging Films
Applications (detailed)	Produce bag shopping bag trash bag	Liners (coex) T-shirt bags, shopping bags, trash bags
Product Description	QTR-131 is a High Molecular Weight C6 Copolymer with excellent overall balance of toughness and good impact strength and tear properties	Q TR-144 is a High Molecular Weight C6 Copolymer designed for film applications and formulated to provide good processability, good toughness and durability as well as good blending characteristics with HMW HDPE film resins



# **BLOW MOULDING PRODUCTS**



GRADE	Q 5502BN	Q 5202BN	Q 50100	Q TR-571
Density, (target, ASTM D1505	0.955	0.951	0.948	0.953
MI-2, (dg/min), (target, ASTM D1238)	0.35	0.35	0.06	0.02
HLMI, (dg/min), (target, ASTM D1238)	33	33	10	2.5
Processing Technique	Blow Moulding	Blow Moulding	Blow Moulding / thermoforming	Blow Moulding
Applications	Containers for packaging food, household chemicals (bleaches, detergents, etc), thin walled parts	Containers for packaging food, household chemicals (bleaches, detergents, etc)	Shipping containers (up to 210L), large blow moulded parts, sheets	Large. Part blow moulding drums
Applications (detailed)	Ice chest & coolers. Household & industrial chemical containers. Food containers, bleach & detergents containers	Oil bottles, household & industrial chemical containers, toys & personal care products, bleach & detergent bottles	Large blow-moulded and thermoformed parts, 220 L shipping containers, gasoline tanks, agricultural chemical tanks, pallets, automotive dunnage, truck bedliners, boats	Jerrycans open top drums 220L L-ring drums
Product Description	Q 5502BN is a High Molecular Weight hexene copolymer tailored for light weight blow molded containers that require excellent stiffness, exceptional processability, exceptional stress cracking resistance	Q 5202BN is a High Molecular Weight hexene copolymer tailored for lightweight blow moulded containers that require excellent stiffness & processability, exceptional ESCR, broad processing window	Q 50100 is an Extra High Molecular Weight copolymer tailored for large blow molded and thermo- formed parts that require good melt strength, good rigidity, excellent ESCR and excellent low temperature impact strength	Q TR-571 is an Extra High Molecular Weight hexene copolymer which provides good balance of: stiffness, melt strength, processability, phemical and stress-crack resistance

22



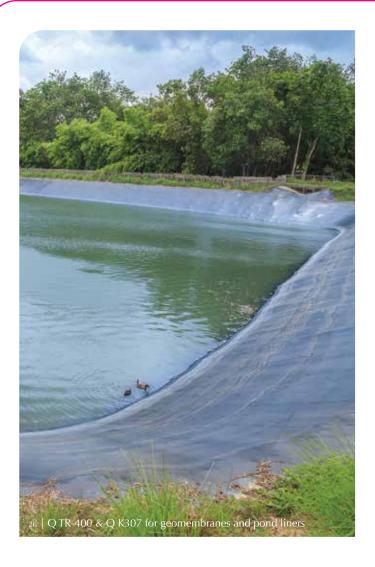




GRADE	Q 3802
Density, (target, ASTM D1505)	0.938
MI-2, (dg/min), (target, ASTM D1238)	0.2
HLMI, (dg/min), (target, ASTM D1238)	15
Processing technique	Pipe
Applications	PE 80 Pressure Pipe and fittings
Applications (detailed)	PE80 pipes and fittings PE-AI-PE composite pipe Geomembrane
Product Description	Q 3802 is a natural (uncolored) High Molecular Weight hexene copolymer. It exhibits: Excellent processability, exceptional melt strength, excellent stress cracking resistance

GRADE	Q TR-400	Q K307
Density, (target, ASTM D1505)	0.938	0.937
MI-2, (dg/min), (target, ASTM D1238)	0.11	
HLMI, (dg/min), (target, ASTM D1238)	11	21
Processing technique	Geomembrane Pipe	Geomembrane
Applications	Geomembrane	Pond liners, gas and chemical tank containment liners and landfill liners
Applications (detailed)	Smooth and textured geomembrane Pressure pipe.	Landfill liners Gasoline and chemical tank contaminant liners Tunnel moisture barriers Mine tailing collecting projects
Product Description	QTR- 400 is a High Molecular Weight hexene copolymer tailored for pressure pipe and geomembrane applications that require: Outstanding ESCR excellent melt strength good processability broad fusion range	Q K307 is a medium density High Molecular Weight hexene copolymer tailored for geomembrane applications that require: Outstanding ESCR broad fusion range excellent melt strength good processability

24 25



# STORAGE, SAFETY AND FOOD CONTACT TECHNICAL DISCLAIMER

- HANDLING & STORAGE: Polyethylene products should be stored in their original
  packaging or in clean appropriate silos. The products should be stored in a dry and well
  ventilated area and should not be exposed to direct sunlight and/or heat in any form
  since this may adversely affect their properties. As a general rule, our products should
  not be stored for more than three months from receipt date.
- SAFETY: Under normal condition Lotrène® products do not present a toxic hazard through skin contact or inhalation. For detailed information please refer to the Safety Data Sheet.
- FOOD CONTACT: Lotrène® polyethylene products manufactured by Qatar Petrochemical Company Q.S.C. (Qapco), Lotrène® polyethylene products manufactured by Qatofin Company Ltd (Qatofin) and Lotrène® polyethylene products manufactured Qatar Chemical Company Ltd. (Q-Chem) or Qatar Chemical Company II Ltd. (Q-Chem II) comply with US and other food contact legislations. Limitations may apply. Please contact your Muntajat representative for detailed compliance certificates.
- NOT SUITABLE FOR PHARMACEUTICAL OR MEDICAL APPLICATIONS: Lotrène®
   LDPE & LLDPE products are not suitable for pharmaceutical or medical applications.
   Unless otherwise specifically indicated, Lotrène® MDPE & HDPE products are not suitable for pharmaceutical or medical applications.
- TECHNICAL DISCLAIMER: The values reported in this technical data sheet are the
  results of tests carried out in accordance with standard test procedures in a laboratory
  environment. Actual properties may vary depending on batch and extrusion conditions.
  Therefore, these values should not be used for specification purposes.

Before using this product, the user is advised and cautioned to make its own determination and assessment of the safety and suitability of the product for the specific use in question, and is further advised against relying on the information contained herein as it may relate to any specific use or application.

It is the ultimate responsibility of the user to ensure that the product is suitable for, and the information is applicable to, the user's specific application. Muntajat does not make, and expressly disclaims, all warranties, including warranties of merchantability or fitness for a particular purpose, regardless of whether oral or written, expressed or implied, or allegedly arising from any usage of any trade or from any course of dealing, in connection with the use of the information contained herein or the product itself. The user expressly assumes all risks and liabilities, whether based in contract, tort or otherwise, in connection with the use of the information contained herein or the product itself. Trademarks may not be used in any manner other than expressly authorized in a written agreement and no trademark or license rights of any kind are granted hereunder, by implication or otherwise.

# MUNTAIAT B.V. GLOBAL NETWORK



Netherlands

Bangladesh lia Vietnam Thailand Philippines

Sri Lanka

# **MUNTAJAT B.V. GLOBAL NETWORK**

#### Netherlands (HQ) - The Hague

WTC The Hague, 19<sup>th</sup> Floor, Toren E, Prinses Margrietplantsoen 78-A, 2595 BR Den Haag, The Hague, The Netherlands.

Tel.: +31 70 2055630 - info.netherlands@muntajatbv.com

#### Australia - Melbourne

Level 6, 330 Collins St, Melbourne, Australia. Tel.: +61 3 9008 5603 - info.australia@muntajatbv.com

Bangladesh - Dhaka

Planners Tower, 13/A Sonargoan Road 15<sup>th</sup> Floor, Room No.- 5 Dhaka-1000, Bangladesh.

Tel.: +880-2-9675737 - info.bangladesh@muntajatbv.com

#### China - Guangzhou

Room 1403, ČITIC Plaza, No. 233. Tian He Road North, Guangzhou, 510613, P.R. China.

Tel.:+86 20 8752 1661 - info.china@muntajatbv.com

# China - Shanghai

Room 1602, 16th Floor, Silver Court, No. 218 South Xi Zang Road, Shanghai, P.R. China.

Tel.: +86 21 5302 0655/6, +86 21 5302 0660/1 - info.china@muntajatbv.com

# Egypt - Cairo

10 El Nozha St. - Ard Al Golf, Heliopolis, Cairo, Egypt. Tel.: +2 02 26901223 - info.egypt@muntajatbv.com

#### Jordan - Amman

Mecca St., AL-Husseini Complex, Building No.152 , 5<sup>th</sup> Floor, Office No.502, Amman - Jordan.

Tel.: +962 6 5522676/5522678 - info.jordan@muntajatbv.com

#### India - Mumbai

914, 9<sup>th</sup> Floor The Capital Building, Bandra Kurla Complex,Bandra East, Mumbai, Maharashtra, India, Pin Code – 400051.

Tel.: +91 22 42465700 - info.india@muntajatbv.com

# Indonesia - Jakarta

World Trade Centre 2, 19<sup>th</sup> Floor, Jl. Jend. Sudirman Kav. 29-31, Jakarta 12920 - Indonesia.

Tel.: +6221 30000 485 / 486 / 488 - info.indonesia@muntajatbv.com

#### Malaysia - Kuala Lumpur

Lot 17-04, Level 17, Menara HLA, No. 3 Jalan Kia Peng, Kuala Lumpur, Malaysia. Tel.: +603-21667122 - info.malaysia@muntajatbv.com

#### Morocco - Casablanca

8 rue Ali Abderrazak, Residence, PLEIN CIEL. Casablanca, Morocco. Tel.: +212 522 23 38 86 - info.morocco@muntajatbv.com

#### Pakistan - Karachi

2<sup>nd</sup> Floor, Bahria Complex II, M. T. Khan Road, Karachi, Pakistan. Tel.: +9221 35611595/6/7 - ext 106 - info.pakistan@muntajatbv.com

#### Philippines - Manila

17-D Petron Mega Plaza Senator, Gil Puyat, Makati City, Philippines. Tel.: +632 856-9836 / 7 / 8 - info.philippines@muntajatbv.com

#### Sri Lanka - Colombo

L-05 East Low Block, World Trade Center, Colombo 01,Sri Lanka Tel.: +94 11 244 5777 - info.srilanka@muntajatbv.com

#### Thailand - Bangkok

9th floor, Unit 904, 208 Wireless Road, Lumpini, Patumwan, Bangkok 10330, Thailand

Tel.: +662 651 5111 - info.thailand@muntajatbv.com

# Turkey - Istanbul

Buyukdere Cad. Noramin Is Merkezi NO:237 A111 Maslak Sariyer - Istanbul. Tel.: +902 1 2329 8250 - info.turkey@muntajatbv.com

### U.A.E. - Dubai

22<sup>nd</sup> Floor, The Citadel Tower, Business Bay Area, Dubai, U.A.E.

Tel.: +971 4 4534980 - info.dubai@muntajatbv.com

#### Vietnam - Ho Chi Minh

81-85 Ham Nghi St., Dist 01, Room 1702, Ho Chi Minh City, Vietnam Tel.: +848 39149130 - info.vietnam@muntajatbv.com

For general queries please contact info@muntajatbv.com

