

# The impact of Uzbekistan's WTO accession on its chemical industry: the CGE analysis

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# Summary

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- The chemical industry accounts for 3.8% of GDP and 6.0% of goods exports, thus playing a noticeable role in the UZB economy
- The domestic manufacturing and exports are concentrated on polyethylene in primary forms and mineral fertilizers, while imports are quite diversified
- As trade with FTAs and MFN partners dominate exports, UZB will not face immediate changes in import duties levied on its exports
- The concessions regarding UZB import duties on chemical products are also likely to be limited as UZB has low protection with a 2.5% average duty
- Main WTO-induced reforms are in technical barriers to trade and the regulation of state-owned enterprises
- All other things being equal, the WTO accession causes the sector's output and exports reduction due to increased import competition and higher costs of production factors competed away by expanding sectors
- To counteract potential losses, the chemical industry has to increase its efficiency, e.g. by continuing privatisation and modernising production

# Structure

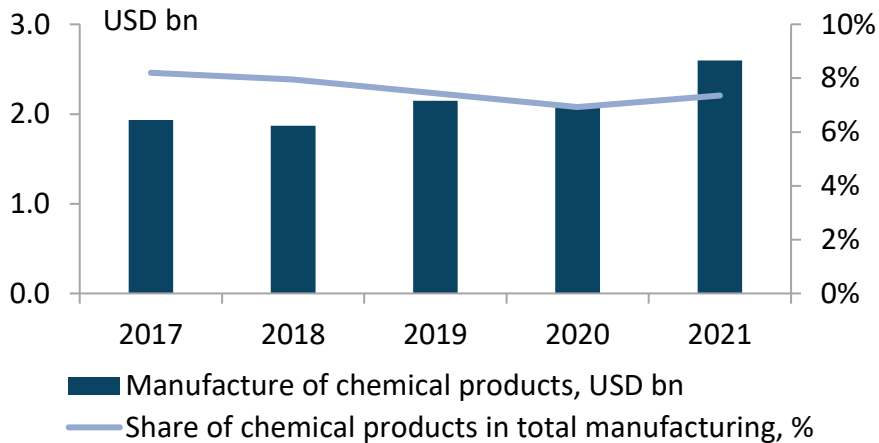
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1. UZB chemical industry overview
2. Potential WTO accession
  - Trade regimes and duties
  - Excises
  - Technical Barriers to Trade
  - State owned enterprises
  - Other aspects
3. CGE model analysis: Impact of the WTO accession on UZB on chemical industry

Annex

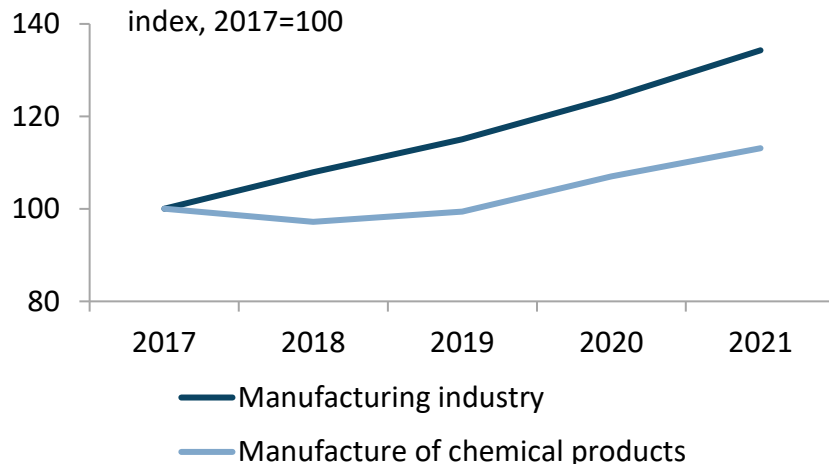
# 1. UZB chemical industry overview: domestic production

UZB chemical industry output



Source: UZSTAT

Growth rate of UZB chemical industry



Source: UZSTAT

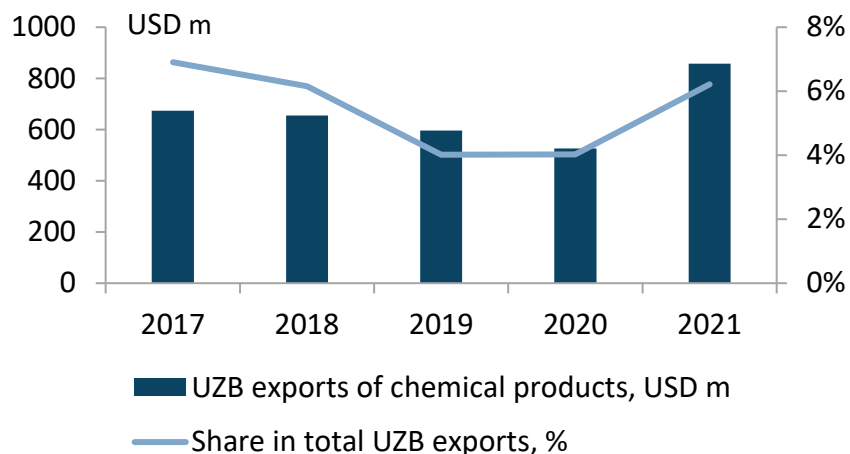
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## UZB chemical industry, 2021:

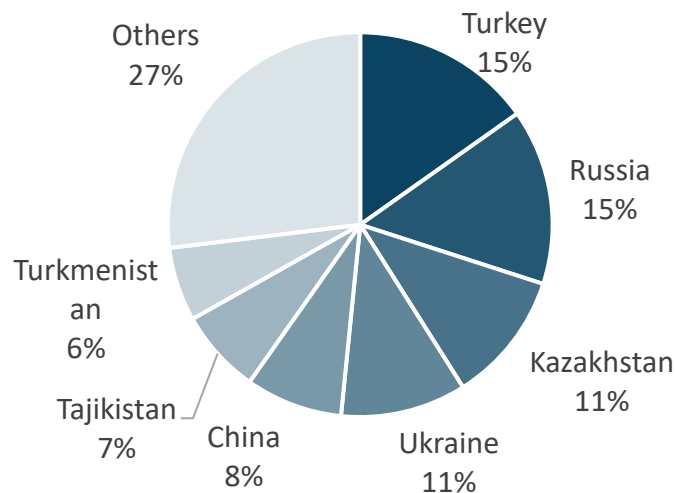
- Output value: USD 2.6 bn
  - Main products
    - Polyethylene in primary forms
    - Mineral fertilizers
  - Share in manufacturing: 7.4%
  - Share in GDP: 3.8%
  - Ownership: mostly state-owned
  - Noticeable growth in recent years, +3.1% per year since 2017
  - However, total manufacturing growth even higher: +7.6% per year
- **Important part of the economy**
- **Growth is slower than manufacturing average**

# UZB chemical industry overview: exports

## UZB chemical industry exports



## Geography of UZB chemical industry exports



Source: WITS

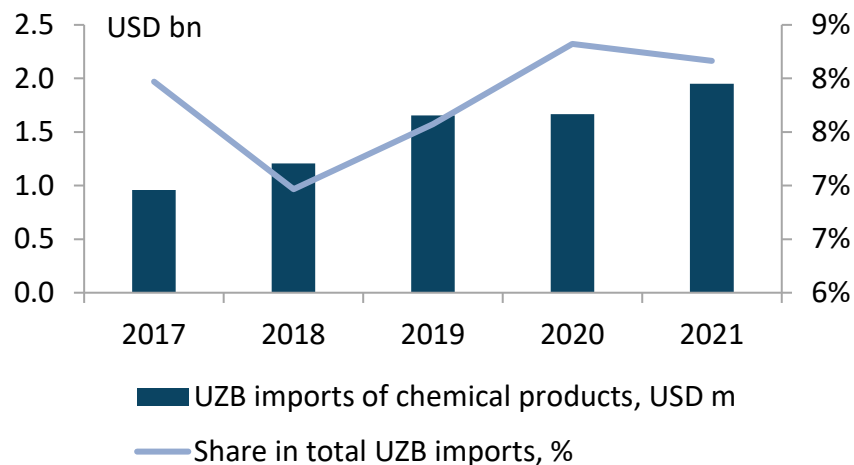
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## UZB exports of chemical products, 2021:

- Value: USD 857 m
- Main export products
  - Polyethylene, in primary forms (36%)
  - Nitrogenous fertilizers (28%)
  - Potassium fertilizers (7%)
- Exports quite diversified, key partners: EAEU (31%) and TUR (15%)
- Exports growth 2017 - 2021 by on average 6.2% yearly, however growth based only on export jump in 2021
- Share in UZB total exports: 6% decrease vs 2017 (7%)
- **Concentrated on primary plastics and mineral fertilizers**
- **Important export industry, but develops less dynamically than other exports**

# UZB chemical industry overview: imports

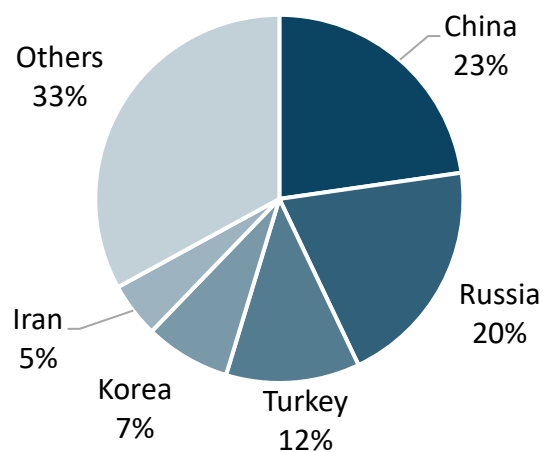
UZB chemical industry imports



## UZB imports of chemical products, 2021:

- Value: USD 2.0 bn
- Main import products
  - Polyesters in primary form (9%)
  - Odoriferous substance mixtures (5%)
- Share in UZB total imports: 8%
- Average growth per year, 2021/2017: +19.4%
- Key partners: EAEU (23%), CHN (23%)
- **Twice higher than exports and stronger growth**
- **Products highly diversified**

Geography of UZB chemical industry imports



Source: WITS

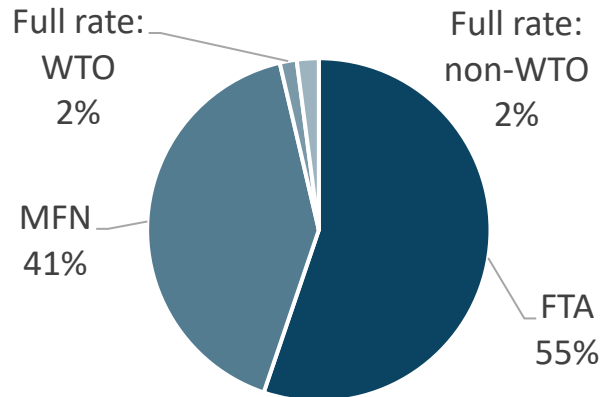
## 2. Potential WTO accession: trade regimes

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- UZB uses three trade regimes:
    - Free trade (FTA)
    - Bilateral agreements on Most Favored Nation (MFN) regime
    - Non-preferential trade
  - WTO membership means the MFN (or better) duty to be used among WTO member states, while duties levied on non-members are not regulated
  - Thus, WTO membership will have a different impact on UZB trade regimes:
    - FTA: no change for exports and imports
    - Bilateral MFN: no changes for UZB exports; changes in UZB MFN import duties based on the country's schedule of concessions (under negotiations)
    - Non-preferential trade:
      - With WTO members: possible change in duties for UZB exports if currently they apply non-MFN duties; UZB to apply MFN import duty
      - With non-WTO members: UZB is free to decide the regime
- **Below, we review the current UZB trade structure by trade regime to understand importance of potential changes**

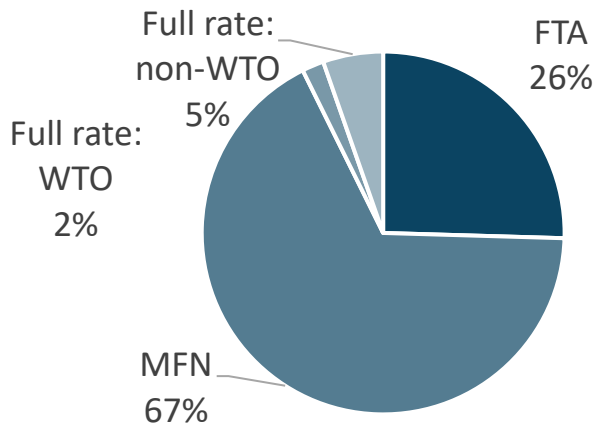
# UZB trade regimes

## UZB chemical industry exports, by trade regime



Source: WITS, WTO, own estimates; Note: data for 2021

## UZB chemical industry imports, by trade regime



Source: WITS, WTO, own estimates; Note: data for 2021

## UZB exports of chemical products, 2021:

- 96% of exports under FTA & MFN, no changes in duties
- **No immediate duty benefits for UZB exports through WTO accession**

## UZB imports of chemical products, 2021:

- No changes for 26% of FTA imports as already duty free
- Most imports from MFN partners, UZB will commit on upper-limit of MFN duties for these partners
- **Potential reduction of UZB duties for MFN partners, further analysis necessary**



# Import duties

## Recent WTO member states' bound duties on chemical products

	Bound duty average	% duty-free tariff lines	Max bound duty	% binding tariff lines
Afghanistan	6.3	1.0	40	92.9
Cabo Verde	8.3	0.9	55	100
Kazakhstan	4.7	9.1	8	100
Lao	19.6	0.4	50	100
Liberia	26.9	0.1	50	100
Montenegro	5.1	15.3	7	100
Russia	5.2	0.4	10	100
Samoa	16.1	0.0	30	100
Saudi Arabia	5.4	11.1	15	100
Seychelles	1.0	85.9	25	100
Tajikistan	3.9	36.5	20	100
Tonga	15.0	0.0	20	100
Ukraine	5.1	15.9	10	100
Vanuatu	33.5	9.3	65	100
Vietnam	6.0	9.0	27	100
Yemen	18.4	0.0	28	100

Source: WTO; Note: the bound rate is the maximum MFN import duty a WTO member state can apply to other members. The bound rates are committed in a country's accession schedule. The bound rate generally cannot be exceeded without compensating the affected parties. Any member is free to apply lower MFN rates than bound rates

## UZB applied MFN duty on chemicals:

- Simple average: 2.5%
- Share of duty-free lines: 77.5%
- Max import duty: 30%

➤ **UZB has low tariff protection of chemical industry**

## Recent WTO members (2005-now), bound import duties on chemicals:

- Median bound average duty: 6.2%
- Median share of duty-free lines: 5%
- Median max duty: 26%

➤ **Higher bound protection than currently applied by UZB**

➤ **UZB can argue to take limited duty concessions on chemical products**

# Excises

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- Excise taxes are regulated by the Tax Code
- UZB applies excises on few product categories:
  - Tobacco and alcohol
  - Petroleum processing products
  - Natural gas
  - Polyethylene granules
  - Sugar
- **Only one chemical product - polyethylene granules – is subject to excises**
- Most UZB excises are discriminatory against imports, i.e. rates levied on imported products are above rates applied to domestically produced goods
- WTO: national treatment means non-discriminatory excises
- UZB will have to align its excises to the WTO principle
- But: excises on polyethylene granules are non-discriminatory; they are set at 10% for both domestic and import producers
- **No need of excises alignment for chemical industry**

# Technical barriers to trade

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- UZB has launched a comprehensive reform of technical barriers to trade (TBT) to align with the WTO TBT Agreement
- Key changes:
  - Mandatory technical regulations establishing essential safety requirements
  - Voluntary standards
  - Declarations of conformity issued by producers/importers
- The Cabinet of Ministers adopted technical regulations on safety of mineral fertilisers and safety of organic products and raw materials and organo-mineral fertilizers
- New law on technical regulation is forthcoming (already in the Parliament)
- No conformity assessment requirements for exports
- **Reduction in import trade costs due to focus on essential safety requirements only (standards' voluntariness in line with WTO TBT Agreement)**

# State owned enterprises

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- Most UZB chemical enterprises are state owned, privatisation is foreseen
  - UZB uses state JSC Uzkimyosanoat for exports of mineral fertilizers produced by state-owned manufacturing companies
  - Private companies are free to export their products on their own
  - Mineral fertilizers' exports are preconditioned by sufficient supply for domestic needs (domestic-supply quotas were used, now replaced by commodity exchange sales being mandatory for state-owned companies)
  - The WTO requires state-trading enterprises to
    - operate on the commercial basis and in a non-discriminatory manner;
    - not erode or nullify the agreed tariff concessions;
    - not serve to implement WTO-inconsistent measures, including quantitative restrictions or subsidies
- **Commitments on commercial behavior are expected**
- **Increased sector commercialization should contribute to its productivity**

# Other aspects

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- **Predictability of trade policy:**
  - UZB cannot be treated worse than any other WTO member states
  - UZB trade policy becomes more predictable, making the country more attractive for trade partners and investors
- **Impact on future trade policy:**
  - Participation in talks about future WTO agreements
- **Impact on access to partners' markets:**
  - UZB still has important partners that are not yet joined the WTO (e.g. Iran, Turkmenistan\*)
  - If UZB accesses earlier than other partners, it can join their working parties for these partners and agree on tariff concessions
- **Dispute settlement mechanism:**
  - Independent platform for trade dispute settlements
- **Important political and economic gains**

*\*FTA with Turkmenistan is limited to predefined list of products*

### 3. CGE model analysis: impact assessment methodology

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- We use the updated computable general equilibrium model for UZB, developed by GET Uzbekistan in 2019
- **Base year for Social Accounting Matrix (SAM): 2016**
- **Base year for goods trade data: 2021**
- **Sectors: 21, including**
  - Sectors producing goods: 20
  - Services sectors: 1
- **Representative household:**
  - Receives all income from factors of production: labor and capital
  - Receives net transfers from government and other countries
- **Government:**
  - Receives income from taxes and net transfers
  - Total spending is fixed
- The model is implemented in GAMS / MPSGE

# Impact assessment: regions and trade regimes

Region in the model	Countries included in the region	Trade regime applied by UZB	Trade regime faced by UZB
EAEU	<i>Russia, Kazakhstan, Belarus, Armenia, Kyrgyzstan</i>	Duty-free trade	Duty-free trade
EU	<i>27 countries</i>	MFN	MFN
Other FTAs	<i>Azerbaijan, Ukraine, Georgia, Moldova, Tajikistan, Turkmenistan</i>	Duty-free trade	Duty-free trade
Other MFN	<i>Afghanistan, Bangladesh, Brazil, Switzerland, China, Egypt, United Kingdom, Indonesia, India, Israel, Jordan, Japan, Korea, Malaysia, Pakistan, Saudi Arabia, Singapore, Turkey, United States, Vietnam</i>	MFN	MFN
Other WTO	<i>Other WTO members</i>	Non-preferential duty*	MFN/Non-preferential duty
Other countries	<i>All other countries</i>	Non-preferential duty*	Non-preferential duty

\*UZB non-preferential duty is twice above UZB MFN duty

# Impact assessment: basic assumptions

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- **Static model** provides the assessment of the long-term effect of policy changes, but not of the adjustment trajectory
- **The principle of *ceteris paribus***: the model does not take into account any other possible economic shocks, like tax changes, global price shocks, new technologies etc., which can also affect the economic development
- **The structure of the economy**: all sectors are competitive, with constant returns to scale (CRTS); the model does not assume any changes in technology
- **Factors of production**: the amount of factors of production is fixed, all factors of production are fully used, factors of production - labor and capital - are completely mobile, except for capital in the mining industry
- **Limitation**: we only take into account changes in import duties, while potential impacts of TBTs, state owned enterprises and other aspects are not modelled
- **The model always has winners and losers**: the increase in one sector can be realised only by attracting production factors from other sectors; **in real world, technological improvements or the use of additional factors**, e.g. employing more people or attracting FDIs, **would allow to mitigate the shock**
- **The model results should be interpreted with great caution: they contain a long-term assessment of the impact of policy changes within the considered scenario and are not a forecast**



# Impact assessment: scenarios

## Assumptions:

- No changes of market access for UZB exports
- UZB sets new MFN import duties for WTO member states, except for states, with which UZB has free trade agreements

	Uniform small change in duties	Uniform change; duties halved	Uniform change; close to full liberalisation	Non-uniform change in duties
<b>Change in UZB MFN import duty</b>	20% ↓	50% ↓	80% ↓	50% ↓
All sectors producing goods, excluding chemical industry	yes	yes	yes	yes
Chemical industry	yes	yes	yes	no

# Impact assessment: impact on chemical industry

Change in indicator compared to baseline, %

	Uniform small change in duties	Uniform change; duties halved	Uniform change; close to full liberalisation	Non-uniform change in duties
<b>Chemical industry</b>				
Output	-0.9	-1.5	-2.0	-0.5
Exports	-0.8	-1.4	-2.1	-1.2
Imports	1.0	1.5	1.9	-0.4
<b>Macroeconomic indicators</b>				
GDP	0.2	0.3	0.4	0.3
Welfare	0.4	0.6	0.9	0.6
Total exports	1.7	2.8	4.0	2.7
Total imports	1.7	2.9	4.1	2.7

Source: CGE model for UZB

- All other things being equal, chemical industry will reduce output and exports, and – in most cases – increase imports due the WTO accession
- The reduction is caused by increased import competition and higher costs of resources competed away by expanding sectors. The latter is the case even if UZB keeps MFN duties on chemical products at the current level
- To counteract potential losses, chemical industry has to increase its efficiency

# Impact assessment: imports by regions

Change in indicator compared to baseline, %

Regions	Uniform small change in duties	Uniform change; duties halved	Uniform change; close to full liberalisation	Non-uniform change in duties
<b>Chemical products imports</b>	<b>1.0</b>	<b>1.5</b>	<b>1.9</b>	<b>-0.4</b>
<i>including</i>				
EAEU	-1.5	-2.3	-3.0	-0.4
EU	6.8	6.0	5.2	-0.4
Other FTAs	-1.5	-2.3	-3.0	-0.4
Other MFN	0.1	1.8	3.5	-0.4
Other WTO	1.6	5.8	10.2	-0.4
Other countries	-1.5	-2.3	-3.0	-0.4

Source: CGE model for UZB

- The WTO accession will result in changes in imports' geography
- In all scenarios envisaging a reduction in import duty on chemical products, imports from WTO members states (EU, other MFN and other WTO) grows, while imports from the EAEU, other FTA partners and non-WTO members states drops

# Conclusions

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- The WTO accession impact on the UZB chemical industry is assessed using the CGE model for UZB; scenarios consider only UZB import duties reduction
- The model shows that the WTO accession will benefit the UZB economy as a whole but put pressure on the chemical industry
- All other things being equal, the sector can face a reduction in output from 0.5% to 2.0% compared to the baseline trajectory, while exports shrink from 0.8% to 2.1% in different scenarios
- The reduction is driven by increased import competition, and higher costs of production factors competed away by expanding sectors
- The scenario with no change in import duties on chemicals still features a reduction in the sector's output, exports and also imports, as the industry cannot get enough resources being absorbed by other sectors
- To counteract potential losses, the chemical industry has to increase its efficiency, this may be done e.g. by continuing privatisation and investing in new technologies and better trained employees

# About the German Economic Team



Financed by the Federal Ministry for Economic Affairs and Climate Action, the German Economic Team (GET) advises the governments of Ukraine, Belarus\*, Moldova, Kosovo, Armenia, Georgia and Uzbekistan on economic policy matters. Berlin Economics has been commissioned with the implementation of the consultancy.

*\*Advisory activities in Belarus are currently suspended.*

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Implemented by



# Annex 1.1: Export product structure by trade regime

HS code	Description	UZB exp, USD m, 2021	FTA	MFN	Full
3901	Polymers of ethylene, in primary forms	312.0	49%	51%	0%
3102	Mineral or chemical fertilizers, nitrogenous	243.9	64%	34%	2%
3104	Mineral or chemical fertilisers, potassic	59.4	21%	57%	22%
3105	Mineral or chemical fertilizers containing two or three of the fertilizing elements	34.4	68%	32%	0%
2503	Sulphur of all kinds, other than sublimed sulphur, precipitated sulphur and colloidal sulphur	31.5	21%	45%	34%
5503	Synthetic staple fibres, not carded, combed or otherwise processed for spinning	30.4	99%	1%	0%
2833	Sulphates; alums; peroxosulphates (persulphates)	30.1	32%	64%	4%
3904	Polymers of vinyl chloride or of other halogenated olefins, in primary forms	18.4	41%	58%	1%
3902	Polymers of propylene or of other olefins, in primary forms	13.7	79%	21%	0%
3103	Mineral or chemical fertilisers, phosphatic	9.4	74%	26%	0%
	Other products	74.1	79%	20%	1%
	<b>Total</b>	<b>857.3</b>	<b>55%</b>	<b>41%</b>	<b>4%</b>

Source: WITS, WTO, own estimates

## Annex 1.2: Import product structure by trade regime

HS code	Description	UZB imp, USD m, 2021	FTA	MFN	Full
3907	Polyacetals, polycarbonates, other polyesters, in primary forms.	169	10%	85%	4%
3302	Mixtures of odoriferous substances	96	4%	93%	3%
3901	Polymers of ethylene, in primary forms.	91	43%	30%	27%
3815	Reaction initiators, reaction accelerators and catalytic preparations, not elsewhere specified or included.	91	2%	98%	0%
3904	Polymers of vinyl chloride or of other halogenated olefins, in primary forms.	90	30%	67%	3%
3824	Prepared binders for foundry moulds or cores	89	18%	82%	1%
3902	Polymers of propylene or of other olefins, in primary forms.	84	34%	53%	12%
5402	Synthetic filament yarn (other than sewing thread), not put up for retail sale	67	4%	94%	2%
3402	Organic surface-active agents	66	57%	28%	15%
3822	Diagnostic or laboratory reagents	63	21%	73%	6%
	Other products	1,041	30%	63%	8%
<b>Total</b>		<b>1,948</b>	<b>25%</b>	<b>67%</b>	<b>7%</b>

Source: WITS, WTO, own estimates