Safety data sheet
according to Regulation (EC) No 1272/2008 (REACH)

edelOutdoor Sealer Comp. B
Status 04.2024

edelundstein
FOR YOUR WALLS AND FLOORS

version: 1

SECTION 1 Identification of the substance or mixture and of the company/undertaking

1.1 Product identifier
Description edelOutdoor Sealer Comp. B

1.2 Relevant identified uses of the substance or mixture and uses advised against
Description/Use
Aliphatic polyurethane catalyst

1.3. details of the supplier providing the safety data sheet

Company name	**edelundstein GmbH**
Address	**Einsteinstraße 12**
Location and country	**33104 Paderborn**
	GERMANY
	Phone +49 5254 9330731
	fax +49 5254 9330733

E-mail of the competent person, who is responsible for the safety data sheet. **info@edel-und-stein.com**

1.4 Emergency number
For urgent information please contact; Technical Information: Dr. Felix Ferlemann +49 170 / 7362924

SECTION 2 Potential hazards

2.1 Classification of the substance or mixture.
The product is classified as hazardous in compliance with the instructions of Regulation (EU) 1272/2008 (CLP) (and subsequent amendments and adjustments). The product therefore requires a safety data sheet compliant with the requirements of Regulation (EU) 1907/2006 and subsequent amendments. Any additional information regarding health and/or environmental risk is provided in sect. 11 and 12 of this data sheet.

Classification and hazard statements:

Acute toxicity, category 4	H332 Harmful by inhalation
Specific toxicity for target organs – single exposure, category 3	H335 May cause respiratory irritation.
Skin sensitization, category 1	H317 May cause allergic skin reactions

2.2. labelling elements.
Hazard labelling according to Regulation (EC) No 1272/2008 (CLP) and subsequent amendments and adaptations
Danger pictograms:

Warnings: Danger
Hazard Statements:

H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H317	May cause an allergic skin reaction.
EUH204	Contains isocyanates. May produce an allergic reaction.
EUH208	Contains: HEXAMETHYLENE-1,6-DIISOCYANATE, May produce an allergic reaction.

Precautionary statements:

P261	Do not inhale dust / fumes / gases / fog / vapours / aerosols.
P280	Wear protective gloves.
P312	Call a POISON CENTRE / doctor /.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

Contains: 1,6-HEXAMETHYLENE DIISOCYANATE HOMOPOLYMER
HYDROPHILIC ALIPHATIC POLYISOCYANATE
HEXAMETHYLENE-1,6-DIISOCYANATE

2.3. other risks.
On the basis of the available data, the product does not contain PBT and vPvB substances in amounts above 0,1 %.

SECTION 3 Composition/information on ingredients

3.1. substances.
Information not pertinent.

3.2. mixtures.
Contains:

Designation:	Concentration % (x)	1272/2008 Classification (CLP)
1,6-HEXAMETHYLENE DIISOCYANATE HOMOPOLYMER CAS 28182-81-2 CE 500-060-2 INDEX Nr. Reg. 01-2119485796-17-XXXX	82 ≤ x < 86	Acute Tox. 4 H332, STOT SE 3 H335, Skin Sens. 1 H317
HYDROPHILIC ALIPHATIC POLYISOCYANATE CAS 666723-27-9 CE INDEX	15 ≤ x < 16,5	Acute Tox. 3 H331, STOT SE 3 H335, Skin Sens. 1 H317, Aquatic Chronic 3 H412
1,6-HEXAMETHYLENE DIISOCYANATE CAS 822-06-0 CE 212-485-8 INDEX 615-011-00-1 Nr. Reg.01-2119457571-37-XXXX	0,4 ≤ x < 0,45	Acute Tox. 2 H330, Eye Irrit. 2 H319, Skin Irrit. 2 H315, STOT SE 3 H335, Resp. Sens. 1 H334, Skin Sens. 1 H317, Nota 2

The full text of the hazard statements (H) is provided in section 16 of the data sheet.

SECTION 4 First aid measures

4.1 Description of first aid measures.
EYES: Remove any contact lenses. Immediately wash with copious amounts of water for at least 15 minutes, opening eyelids fully. Consult a doctor if the problem persists.
SKIN: Remove any contaminated clothing. Take a shower immediately. Seek medical advice immediately. Wash contaminated clothing prior to reuse.
INHALATION: Move the victim to the open air. If the victim stops breathing, administer artificial respiration. Seek medical advice immediately.
INGESTION: Seek medical advice immediately. Do not induce vomiting. Do not administer anything that is not explicitly authorised by the doctor.

4.2 Main acute and delayed symptoms and effects.
Specific information on symptoms and effects caused by the product are unknown..

4.3. references to emergency medical assistance or special treatment.
Data not available.

SECTION 5 Fire-fighting measures

5.1. extinguishing agents.
SUITABLE EXTINGUISHING MEDIA
Use traditional extinguishing media: carbon dioxide, foam, powder and water spray.
UNSUITABLE EXTINGUISHING MEDIA: None in particular

5.2 Special risks arising from the substance or mixture.
HAZARDS DUE TO EXPLOSION IN THE EVENT OF FIRE
Do not breath combustion products.

5.3. instructions for fire fighting.
GENERAL INFORMATION
Cool the containers with water jets in order to avoid the decomposition of the product and the development of substances potentially hazardous for health. Always wear full fire protection equipment. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

EQUIPMENT
Normal fire-fighting clothing, such as a self-contained open-circuit compressed air respirator (EN 137), flame-retardant suit (EN 469), flame-retardant gloves (EN 659) and firefighter boots (HO A29 or A30).

SECTION 6 Accidental release measures

6.1. personal precautions, protective equipment and emergency procedures.
Block the leak if there is no hazard. Wear suitable protective devices (including personal protection devices indicated in Section 8 of the safety data sheet) in order to prevent contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

6.2 Environmental protection measures.
The product must not penetrate into the sewer system or come into contact with surface water or ground water.

6.3. methods and materials for retention and cleaning.
Vacuum the leaked product into a suitable container. If the product is flammable, use explosion proof equipment. Evaluate the compatibility of the container to be used with the product by checking Section 10. Absorb any remaining material using inert absorbent material. Provide sufficient ventilation of the area of the leak. Contaminated material should be disposed of in compliance with the provisions set forth in Section 13.

6.4. reference to other sections.
Any information on personal protection and disposal is given in sections 8 and 13.

SECTION 7 Handling and storage

7.1. protective measures for safe handling.
Handle the product after checking all the other sections of this safety data sheet. Avoid the dispersion of the product in the environment. Never eat, drink or smoke during use. Remove contaminated clothing and protective equipment before accessing the eating area.

7.2. conditions for safe storage, taking into account incompatibilities
Store only in the original container. Keep the containers closed, in a well-ventilated area, away from direct sunlight. Keep containers away from any incompatible materials; see Section 10.

7.3 Specific end uses.
Data not available.

SECTION 8 Exposure controls/personal protection

8.1.parameters to be monitored
Regulatory references:

BGR	България	МИНИСТЕРСТВО НА ТРУДА И СОЦИАЛНАТА ПОЛИТИКА МИНИСТЕРСТВО НА ЗДРАВЕОПАЗВАНЕТО НАРЕДБА No 13 от 30 декември 2003 г
CZE	Česká Republika	Nařízení vlády č. 361/2007 Sb. kterým se stanoví podmínky ochrany zdraví při práci
DEU	Deutschland	MAK-und BAT-Werte-Liste 2012
ESP	España	INSHT - Límites de exposición profesional para agentes químicos en España 2015
FRA	France	JORF n°0109 du 10 mai 2012 page 8773 texte n° 102
GBR	United Kingdom	EH40/2005 Workplace exposure limits
POL	Polska	ROZPORZĄDZENIE MINISTRA PRACY I POLITYKI SPOŁECZNEJ z dnia 16 grudnia 2011r
SVK	Slovensko	NARIADENIE VLÁDY Slovenskej republiky z 20. júna 2007
	TLV-ACGIH	ACGIH 2016

1,6-HEXAMETHYLENE DIISOCYANATE HOMOPOLYMER

Concentration expected to not have effects on the environment - PNEC		
Reference value in freshwater	0.127	mg/l
Reference value in salt water	0.0127	mg/l
Reference value for sediments in freshwater	266700	mg/kg
Reference value for sediments in salt water	26670	mg/kg
Reference value for water, intermittent release	1.27	mg/l
Reference value for STP micro-organisms	38.3	mg/l
Reference value for the land compartment	53182	mg/kg

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				**Effects on workers**			
Exposure life	**Locally acute**	**Systematically acute**	**Locally chronic**	**Systematically chronic**	**Locally acute**	**Systematically acute**	**Locally chronic**	**Systematically chronic**
Inhalation					1 mg/m³		0.5 mg/m³	

HEXAMETHYLENE-1,6-DIISOCYANATE

Threshold limit value

Type	Status	TWA/8h mg/m3	Ppm	STEL/15min mg/m3	ppm	
TLV	BGR	0.1				
TLV	CZE	0.035		0.07		
AGW	DEU	0.035	0.005	0.035	0.005	
MAK	DEU	0.035	0.005	0.035	0.005	
VLA	ESP	0.035	0.005			
VLEP	FRA	0.075	0.01	0.15	0.02	
WEL	GBR	0.02		0.07		
NDS	POL	0.04		0.08		
NPHV	SVK	0.035	0.005	0.035		
TLV-ACGIH		0.034	0.005			

Concentration expected to not have effects on the environment - PNEC		
Reference value in freshwater	0.0774	mg/l
Reference value in salt water	0.00774	mg/l
Reference value for sediments in freshwater	0.01334	mg/kg
Reference value for sediments in salt water	0.001334	mg/kg
Reference value for water, intermittent release	0.774	mg/l
Reference value for STP micro-organisms	8.42	mg/l
Reference value for the land compartment	0.0026	mg/kg

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Exposure life	**Locally acute**	**Systematically acute**	**Locally chronic**	**Systematically chronic**	**Locally acute**	**Systematically acute**	**Locally chronic**	**Systematically chronic**
Inhalation					0.07 mg/m³	0.07 mg/m³	0.035 mg/m³	0.035 mg/m³

Key:
(C) = CEILING; INALAB = Inhalable fraction;
RESPIR = Respirable fraction; TORAC = Thoracic fraction.
VND = hazard identified but no DNEL/PNEC available;
NEA = no exposure expected; NPI = no hazard identified.
NPI = no hazard

TLV of the solvent mixture: 0.03 mg/m3

8.2 Exposure controls and monitoring.

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration.
In order to choose the personal protective equipment, we recommend you to ask for advice from your suppliers of chemicals. Personal protective equipment must be EC marked to prove their compliance with current regulations. Provide an emergency shower with eye/face wash station.
HAND PROTECTION
Protect hands with category III work gloves (ref. Standard EN374). The following should be considered when choosing work gloves material: compatibility, degradation, failure time and permeability. For preparations, the work gloves resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves wear time depends on the duration and type of use.
SKIN PROTECTION
Wear category II professional long-sleeved overalls and safety footwear (see Directive 89/686/EEC and Standard EN ISO 20344). Wash body with soap and water after removing protective clothing.
EYE PROTECTION
Wear airtight protective goggles (see Standard EN 166).
RESPIRATORY PROTECTION
In the event the threshold level is exceeded (e.g. TLV-TWA) for the substance or one or more of the substances present in the product, it is recommended to wear a mask with B type filter for class (1, 2, or 3), and it must be chosen according to the concentration threshold of use (ref. Standard EN 14387). In the presence of gases or vapours of various kinds and/or gases or vapours containing particulate (aerosol, fumes, mists, etc.) combined filters are required. Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the considered threshold values. The protection provided by masks is in any case limited. If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus (ref. Standard EN 137) or external air-intake breathing apparatus (ref. Standard EN138). For a correct choice of respiratory protection device, see Standard EN 529.
ENVIRONMENTAL EXPOSURE CONTROLS
The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

SECTION 9 Physical and chemical properties

9.1. information on the basic physical and chemical properties.

PHYSICAL STATE	Liquid
COLOUR	Not available
ODOUR	Not available
ODOUR THRESHOLD	Not available
pH	Not available
MELTING POINT / FREEZING POINT	Not available
INITIAL BOILING POINT	Not available
BOILING RANGE	Not available
FLASH POINT	> 60 °C
EVAPORATION RATE	Not available
FLAMMABILITY (SOLID, GAS)	Not available
LOWER FLAMMABILITY LIMIT	Not available
UPPER FLAMMABILITY LIMIT	Not available
LOWER EXPLOSIVE LIMIT	Not available

UPPER EXPLOSIVE LIMIT	Not available
VAPOUR PRESSURE	Not available
VAPOUR DENSITY	Not available
RELATIVE DENSITY	1.15
SOLUBILITY	Not available
PARTITION COEFFICIENT: N-OCTANOL/WATER	Not available
AUTO-IGNITION TEMPERATURE	Not available
DECOMPOSITION TEMPERATURE	Not available
VISCOSITY	> 20.5 mm2/sec (40 °C)
EXPLOSIVE PROPERTIES	Not available
OXIDISING PROPERTIES	Not available

9.2 Other information.

TOTAL SOLIDS (250 °C / 482 °F)	99.60 %
VOC (Directive 2010/75/EC)	0
VOC (volatile carbon)	0

SECTION 10 Stability and reactivity

10.1. Reactivity.
There is no particular danger of reaction with other substances under normal conditions of use.

HEXAMETHYLENE-1,6-DIISOCYANATE
It decomposes at 255 °C/491 °F. It polymerizes at temperatures greater than 200 °C/392 °F.

10.2 Chemical stability.
The product is stable under normal processing and storage conditions.

10.3. possibility of dangerous reactions.
Under normal conditions of use and storage no hazardous reactions are expected.

HEXAMETHYLENE-1,6-DIISOCYANATE
May form explosive mixtures with: alcohols, bases. May violently react with: alcohols, amines, strong bases, oxidizing agents, strong acids, water.

10.4 Conditions to be avoided.
None in particular. In any case, take all usual care when handling chemical products.

HEXAMETHYLENE-1,6-DIISOCYANATE
Avoid exposure to: high temperatures, moisture.

10.5. incompatible materials.
HEXAMETHYLENE-1,6-DIISOCYANATE
Incompatible with: alcohols, carboxylic acids, amines, strong bases.

10.6. hazardous decomposition products.
HEXAMETHYLENE-1,6-DIISOCYANATE
May develop: nitrogen oxides, cyanhydric acid.

SECTION 11 Toxicological information

In the absence of experimental toxicological data on the product itself, any hazards posed by the product to health have been evaluated based on the properties of the contained substances, according to the criteria defined by the classification reference standards.
Therefore, consider the concentrations of the individual substances indicated in Section 3 to evaluate the toxicological effects due to exposure of the product.

11.1. information on toxicological effects.

Metabolism, toxicokinetics, mechanism of action and other information
Information not available.

Information on possible exposure scenarios
Information not available.

Immediate, delayed and chronic effects due to short and long-term exposure
Information not available.

Interactive effects
Information not available.

ACUTE TOXICITY:

LC50 (Inhalation - vapours) of the mixture:	> 20 mg/l
LC50 (Inhalation - spray / powder) of the mixture:	1.1 mg/l
LD50 (Oral) of the mixture::	Not classified (no relevant component)
LD50 (Skin) of the mixture:	Not classified (no relevant component)

HEXAMETHYLENE-1,6-DIISOCYANATE
LC50 (Inhalation) 0.124 mg/l/4h Rat

SKIN CORROSION / SKIN IRRITATION
It does not meet the classification criteria for this hazard class.

SEVERE EYE DAMAGE / EYE IRRITATION
It does not meet the classification criteria for this hazard class.

RESPIRATORY OR SKIN SENSITISATION
May produce an allergic reaction.

Contains:
HEXAMETHYLENE-1,6-DIISOCYANATE

GERM CELLS MUTAGENICITY
It does not meet the classification criteria for this hazard class.

CARCINOGENICITY
It does not meet the classification criteria for this hazard class.

REPRODUCTIVE TOXICITY
It does not meet the classification criteria for this hazard class.

SPECIFIC TOXICITY FOR TARGET ORGANS (STOT) - SINGLE EXPOSURE,
It does not meet the classification criteria for this hazard class.

SPECIFIC TOXICITY FOR TARGET ORGANS (STOT) - REPEATED EXPOSURE
It does not meet the classification criteria for this hazard class.

ASPIRATION HAZARD
It does not meet the classification criteria for this hazard class Viscosity: >20.5 mm2/sec (40 °C).

SECTION 12 Environmental information

As no specific data is available for the preparation, adopt good working practices and do not discharge the product into the environment. Avoid discharging the product into the ground or in waterways. Inform the competent authorities, should the product reach waterways or contaminate soil or vegetation. Undertake measures to minimize any effect on ground water.

12.1. Toxicity.
Data not available.

12.2. persistence and degradability.
HEXAMETHYLENE-1,6-DIISOCYANATE
NOT Rapidly biodegradable.

12.3. Bioaccumulation potential.
HEXAMETHYLENE-1,6-DIISOCYANATE

Partition coefficient: n-octanol/water	3.2
BCF	3.2

12.4. mobility in the soil.
Information not available.

12.5 Results of the PBT and vPvB assessment.
On the basis of the available data, the product does not contain PBT and vPvB substances in amounts above 0,1 %.

12.6. other adverse effects.
Data not available.

SECTION 13. disposal instructions

13.1. waste treatment procedures.
Reuse, when possible. As-is product residues is to be considered non-hazardous special waste.
Disposal must be performed through an authorised waste management company, in compliance with national and local regulations.
CONTAMINATED PACKAGING
Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

SECTION 14. transport information

The product is not considered hazardous in compliance with the current regulations on transportation of hazardous materials on roadways (ADR), by rail (RID), by sea (IMDG Code) or by air (IATA).

14.1. UN number	Not applicable.
14.2 UN proper shipping name	Not applicable.
14.3. transport hazard classes	Not applicable.
14.4. packing group	Not applicable.
14.5 Environmental hazards	Not applicable.
14.6 Special precautions for users	Not applicable.

14.7. carriage in bulk in accordance with Annex II of MARPOL 73/78 and the IBC Code
Information not relevant.

SECTION 15 Legislation

15.1. safety, health and environmental protection requirements/specific legislation for the substance or mixture.
Seveso Category - Directive 2012/18/EC: None

Restrictions relating to the product or contained substances pursuant to Annex XVII to Regulation EC 1907/2006:
Point. 3

Substance in Candidate List (Art. 59 REACH):
On the basis of available data, the product does not contain any SVHC in percentage greater than 0.1%.

Substances subject to authorization (Annex XIV REACH)
None

Substances subject to exportation reporting pursuant to Reg. (EC) 649/2012:
None

Substances subject to the Rotterdam Convention:
None

Substances subject to the Stockholm Convention:
None

Healthcare controls:
Workers exposed to this chemical agent hazardous to their health must undergo health monitoring in compliance with dispositions provided by Art. 41 of Italian Legislative Decree 81 dated 9 April 2008,unless the risk for health and safety of the worker is assessed to be irrelevant, according to Art. 224 par. 2.

Italian Legislative Decree 152/2006 and subsequent amendments:

Emissions according to Part V Annex I:
TAB. D Class 1 00.40 %

15.2 Chemical Safety Assessment.
No chemical safety assessment has been processed for the mixture and the substances it contains.

SECTION 16 Other information

Text of the hazard statements (H phrases) mentioned in sections 2-3 of the data sheet:

Acute Tox. 2	Acute toxicity, category 2
Acute Tox. 3	Acute toxicity, category 3
Acute Tox. 4	Acute toxicity, category 4
Eye Irrit. 2	Eye irritation, category 2
Skin Irrit. 2	Skin irritation, category 2
STOT SE 3	Specific toxicity for target organs - single exposure, category 3
Resp. Sens. 1	Respiratory sensitization, category 1
Skin Sens. 1	Skin sensitization, category 1
Aquatic Chronic 3	Hazardous to aquatic environments, chronic toxicity, category 3

H330	Lethal if inhaled.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H335	May cause respiratory irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317	May cause an allergic skin reaction.
H412	Toxic to aquatic life with long-lasting effects.
EUH204	Contains isocyanates. May produce an allergic reaction.

Decodification of uses descriptors:

AC	4	Stone, plaster, cement, glass and ceramic items
PC	9a	Coatings and paints, thinners, paint removers
PROC	10	Apply with rolls or brushes
PROC	7	Industrial spray application
SU	19	Constructions

KEY:
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- CAS NUMBER: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- EC NUMBER: Identification number in ESIS (European Substances Information System)
- CLP: Regulation EC 1272/2008
- DNEL: Derived no effect level
- EmS: Emergency Schedule
- GHS: Global harmonized system for classification and labelling of chemical products
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization concentration for 50% of the test population
- IMDG: International maritime dangerous goods code - IMO: International Maritime Organization
- INDEX NUMBER: Index number of CLP Annex VI
- LC50: 50% of lethal concentration
- LD50: 50% lethal dose

- OEL: Occupational exposure level
- PBT: Persistent, bioaccumulative, and toxic according to REACH
- PEC: Predicted environmental concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: Regulation EC 1907/2006
- RID: Regulation concerning the international carriage of dangerous goods by rail
- TLV: Threshold limit value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA STEL: Short-term exposure limit
- TWA: Time-weighted average exposure limit
- VOC: Volatile organic compound
- vPvB: Very persistent and very bioaccumulative according to REACH-WGK: Water hazard class (Germany)

GENERAL BIBLIOGRAPHY:

1. Regulation (EU) 1907/2006 of the European Parliament (REACH)
2. Regulation (EU) 1272/2008 of the European Parliament (CLP)
3. Regulation (EU) 790/2009 of the European Parliament (I Atp. CLP)
4. Regulation (EU) 2015/830 of the European Parliament
5. Regulation (EU) 286/2011 of the European Parliament (II Atp. CLP)
6. Regulation (EU) 618/2012 of the European Parliament (III Atp. CLP)
7. Regulation (EU) 487/2013 of the European Parliament (IV Atp. CLP)
8. Regulation (EU) 944/2013 of the European Parliament (V Atp. CLP)
9. Regulation (EU) 605/2014 of the European Parliament (VI Atp. CLP)
10. Regulation (EU) 2015/1221 of the European Parliament (VII Atp. CLP)
11. Regulation (EU) 2016/918 of the European Parliament (VIII Atp. CLP)

- The Merck Index. - 10th Edition
- Handling Chemical Safety
- INRS - Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
- IFA GESTIS Website
- ECHA website
- Database of SDS templates for chemical substances - Ministry of Health and National Institute of Health

Note for user:
The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.
This document must never be interpreted as a guarantee of any specific product property.
Since the use of the product does not fall within our direct control, the user is required to observe health and safety current laws and current regulations under their own responsibility. The manufacturer is not responsible for improper use. Provide adequate training to the personnel responsible for using chemical products.