

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878
Issue date: 09/11/2009 Revision date: 16/07/2024 Supersedes version of: 04/03/2015 Version: 3.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Product form : Mixture
Product name : PDC® F-830 MURACULON C4 BLUE
Product code : F830105C4
Product group : Trade product

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

Use of the substance/mixture : Coating

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet**Manufacturer**

Plasti Dip International, Inc.
3920 Pheasant Ridge Drive
Blaine, MN 55449
Phone - (763) 785-2156

Distributor

Global Express
7 Indian Path
Millstone, NJ 08535
(732) 977-0605

EU Importer of Record

Plasti Dip UK Ltd.
Unit 1, Harvesting Lane
PETERSFIELD
GU32 1QR
United Kingdom

1.4. Emergency telephone number**Manufacturer Emergency number**

CHEMTREC: 1-800-424-9300 (US);
+1 703-741-5970 (International)

Distributor Emergency number

CHEMTREC: 1-800-424-9300 (US);
+1 703-741-5970 (International)

Importer Emergency number

CHEMTREC: 1-800-424-9300 (US);
+1 703-741-5970 (International)

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Classification according to Regulation (EC) No. 1272/2008**

Flammable liquids Category 2	H225
Skin corrosion/irritation Category 2	H315
Serious eye damage/eye irritation, Category 2	H319
Carcinogenicity Category 2	H351
Reproductive toxicity Category 2	H361
Specific target organ toxicity – Single exposure, Category 3, Narcosis	H336
Specific target organ toxicity – Repeated exposure, Category 2	H373
Aspiration hazard Category 1	H304
Full text of H statements : see section 16	

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements**Labeling according to Regulation (EC) No. 1272/2008 [CLP]**

Hazard pictograms (CLP) :



Signal word (CLP)

: Danger

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Hazard statements (CLP)	: H225 - Highly flammable liquid and vapour. H304 - May be fatal if swallowed and enters airways. H315 - Causes skin irritation. H319 - Causes serious eye irritation. H336 - May cause drowsiness or dizziness. H351 - Suspected of causing cancer. H361 - Suspected of damaging fertility or the unborn child. H373 - May cause damage to organs through prolonged or repeated exposure.
Precautionary statements (CLP)	: P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P271 - Use only outdoors or in a well-ventilated area. P280 - Wear protective gloves/protective clothing/eye protection/face protection/hearing protection. P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

The mixture contains Methyl ethyl ketone (CAS#78-93-3), which is identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605, at a concentration equal to or greater than 0,1 %

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Acetone	CAS-No.: 67-64-1 EC-No.: 200-662-2 EC Index-No.: 606-001-00-8	15 – 40	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336
Toluene	CAS-No.: 108-88-3 EC-No.: 203-625-9 EC Index-No.: 601-021-00-3	10 – 30	Flam. Liq. 2, H225 Acute Tox. 2 (Inhalation:dust,mist), H330 Skin Irrit. 2, H315 Repr. 2, H361d STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304
Xylene	CAS-No.: 1330-20-7 EC-No.: 215-535-7 EC Index-No.: 601-022-00-9	7 – 13	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation), H332 Acute Tox. 4 (Dermal), H312 Skin Irrit. 2, H315
Ethylbenzene	CAS-No.: 100-41-4 EC-No.: 202-849-4 EC Index-No.: 601-023-00-4	1 – 5	Flam. Liq. 2, H225 Acute Tox. 4 (Inhalation), H332 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Chronic 2, H411

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Methyl ethyl ketone	CAS-No.: 78-93-3 EC-No.: 201-159-0 EC Index-No.: 606-002-00-3	0.1 – 1	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336
Titanium dioxide	CAS-No.: 13463-67-7 EC-No.: 236-675-5 EC Index-No.: 022-006-00-2	0.1 – 1	Carc. 2, H351
Stoddard solvent	CAS-No.: 8052-41-3 EC-No.: 232-489-3 EC Index-No.: 649-345-00-4	0.1 – 1	Carc. 1B, H350 Muta. 1B, H340 Asp. Tox. 1, H304 STOT RE 1, H372
Cumene	CAS-No.: 98-82-8 EC-No.: 202-704-5 EC Index-No.: 601-024-00-X	0.1 – 1	Flam. Liq. 3, H226 Carc. 1B, H350 STOT SE 3, H335 Asp. Tox. 1, H304 Aquatic Chronic 2, H411

Full text of H- and EUH-statements: see section 16

SECTION 4: First Aid measures

4.1. Description of first aid measures

First-aid measures general	: If exposed or concerned, get medical attention/advice. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use. Never give anything to an unconscious person.
First-aid measures after inhalation	: IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention. If breathing is difficult, supply oxygen. If breathing has stopped, give artificial respiration.
First-aid measures after skin contact	: IF ON SKIN (or clothing): Remove affected clothing and wash all exposed skin with water for at least 15 minutes. If irritation develops or persists, get medical attention.
First-aid measures after eye contact	: IF IN EYES: Immediately flush with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do so. Continue rinsing if pain, blinking, or irritation develops or persists, get medical attention. Continue rinsing.
First-aid measures after ingestion	: IF SWALLOWED: rinse mouth thoroughly. Do not induce vomiting without advice from poison control center or medical professional. Get medical attention immediately.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects	: May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye irritation. May cause drowsiness or dizziness. Suspected of damaging fertility. Suspected of damaging the unborn child. Suspected of causing cancer. May cause damage to organs through prolonged or repeated exposure.
Symptoms/effects after inhalation	: May cause drowsiness or dizziness.
Symptoms/effects after skin contact	: Causes skin irritation.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: May be fatal if swallowed and enters airways.
Chronic symptoms	: Suspected of causing cancer. Suspected of damaging fertility. Suspected of damaging the unborn child. May cause damage to organs through prolonged or repeated exposure.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available.

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Foam. Carbon dioxide. Dry chemical.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Highly flammable liquid and vapour.
Explosion hazard : Heating may cause an explosion.
Reactivity in case of fire : None known.
Hazardous decomposition products in case of fire : Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases, including carbon oxides and other organic compounds will be evolved when this material undergoes thermal degradation.

5.3. Advice for firefighters

Precautionary measures fire : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Do not dispose of fire-fighting water in the environment. Prevent human exposure to fire, fumes, smoke and products of combustion.
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.
Other information : This material is flammable and may be ignited by heat, sparks, or static electricity.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Evacuate area. Ventilate area. Keep upwind. Spill should be handled by trained cleaning personnel properly equipped with respiratory and eye protection.

6.1.1. For non-emergency personnel

Protective equipment : Wear Protective equipment as described in Section 8.
Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Wear suitable protective clothing, gloves and eye or face protection. Approved supplied-air respirator, in case of emergency.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Prevent entry to sewers and public waters.
Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. This material and its container must be disposed of in a safe way, and as per local legislation.

6.4. Reference to other sections

See Sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Do not handle until all safety precautions have been read and understood. Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Keep away from sources of ignition - No smoking.

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep the container tightly closed. Store in a dry, cool and well-ventilated place. Keep away from ignition sources.

7.3. Specific end use(s)

Coating.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. National occupational exposure and biological limit values

Toluene (108-88-3)	
EU - Indicative Occupational Exposure Limit (IOEL)	
IOEL TWA	192 mg/m ³
IOEL TWA [ppm]	50 ppm
IOEL STEL	384 mg/m ³
IOEL STEL [ppm]	100 ppm
Notes	Possibility of significant uptake through the skin
Austria - Occupational Exposure Limits	
MAK (OEL TWA)	190 mg/m ³
MAK (OEL TWA) [ppm]	50 ppm
MAK (OEL STEL)	380 mg/m ³
MAK (OEL STEL) [ppm]	100 ppm
Chemical category	skin notation
Belgium - Occupational Exposure Limits	
OEL TWA	77 mg/m ³
OEL TWA	20 ppm
OEL STEL	384 mg/m ³
OEL STEL	100 ppm
Chemical category	Skin, skin notation
Bulgaria - Occupational Exposure Limits	
OEL TWA	192 mg/m ³
OEL TWA	50 ppm
OEL STEL	384 mg/m ³
OEL STEL	100 ppm
Bulgaria - Biological limit values	
BLV	1.6 mmol/mmol Creatinine Parameter: Hippuric acid - Medium: urine - Sampling time: at the end of exposure or end of work shift
Croatia - Occupational Exposure Limits	
GVI (OEL TWA) [1]	192 mg/m ³
GVI (OEL TWA) [2]	50 ppm
KGVI (OEL STEL)	384 mg/m ³

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Toluene (108-88-3)	
KGVI (OEL STEL) [ppm]	100 ppm
Chemical category	skin notation
Croatia - Biological limit values	
BLV	1 mg/l Parameter: Toluene - Medium: blood - Sampling time: at the end of the work shift 20 ppm Medium: final exhaled air - Sampling time: during exposure 2.5 g/g Kreatinin Parameter: Hippuric acid - Medium: urine - Sampling time: at the end of the work shift (calculated on the average Creatinine value of 1.2 g/L urine) 1 mg/g Kreatinin Parameter: o-Cresol - Medium: urine - Sampling time: at the end of the work shift (calculated on the average Creatinine value of 1.2 g/L urine)
Cyprus - Occupational Exposure Limits	
OEL TWA	192 mg/m ³
OEL TWA	50 ppm
OEL STEL	384 mg/m ³
OEL STEL	100 ppm
Chemical category	Skin-potential for cutaneous absorption
Czech Republic - Occupational Exposure Limits	
PEL (OEL TWA)	200 mg/m ³
Chemical category	Potential for cutaneous absorption
Czech Republic - Biological limit values	
BLV	1.6 µmol/mmol Creatinine Parameter: o-Cresol - Medium: urine - Sampling time: end of shift (after hydrolysis) 1000 µmol/mmol Creatinine Parameter: Hippuric acid - Medium: urine - Sampling time: end of shift (exposure testing using the o-Cresol parameter to precisely measure Toluene exposure is needed if the value of Hippuric acid is between 1600 and 2500 mg/g of Creatinine, no additional testing is needed if the Hippuric acid value is >2500 mg/g of Creatinine as work exposure to Toluene will have highly exceeded the PEL value.) 1.5 mg/g Kreatinin Parameter: o-Cresol - Medium: urine - Sampling time: end of shift (after hydrolysis) 1600 mg/g Kreatinin Parameter: Hippuric acid - Medium: urine - Sampling time: end of shift (exposure testing using the o-Cresol parameter to precisely measure Toluene exposure is needed if the value of Hippuric acid is between 1600 and 2500 mg/g of Creatinine, no additional testing is needed if the Hippuric acid value is >2500 mg/g of Creatinine as work exposure to Toluene will have highly exceeded the PEL value.)
Denmark - Occupational Exposure Limits	
OEL TWA [1]	94 mg/m ³
OEL TWA [2]	25 ppm
OEL STEL	188 mg/m ³
OEL STEL	50 ppm
Chemical category	Potential for cutaneous absorption
Estonia - Occupational Exposure Limits	
OEL TWA	192 mg/m ³
OEL TWA	50 ppm
OEL STEL	384 mg/m ³
OEL STEL	100 ppm
Chemical category	skin notation

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Toluene (108-88-3)	
Finland - Occupational Exposure Limits	
HTP (OEL TWA) [1]	81 mg/m ³
HTP (OEL TWA) [2]	25 ppm
HTP (OEL STEL)	380 mg/m ³
HTP (OEL STEL) [ppm]	100 ppm
Chemical category	Potential for cutaneous absorption
Finland - Biological limit values	
BLV	500 nmol/L Parameter: Toluene - Medium: blood - Sampling time: in the morning after a working day
France - Occupational Exposure Limits	
VME (OEL TWA)	76.8 mg/m ³ TWA [VME] (restrictive limit)
VME (OEL TWA) [ppm]	20 ppm TWA [VME] (restrictive limit)
VLE (OEL C/STEL)	384 mg/m ³ STEL [VLCT] (restrictive limit)
VLE (OEL C/STEL) [ppm]	100 ppm STEL [VLCT] (restrictive limit)
Chemical category	Risk of cutaneous absorption
France - Biological limit values	
BLV	20 µg/l Parameter: Toluene - Medium: blood - Sampling time: end of workweek (Semi-quantitative (ambiguous interpretation)) Parameter: Hippuric acid - Medium: urine - Sampling time: end of shift (per the Authority, the values for this substance must be decided and/or determined on a case by case basis. Guidance for the calculation of and interpretation of values is provided in the source)
Germany - Occupational Exposure Limits (TRGS 900)	
AGW (OEL TWA) [1]	190 mg/m ³
AGW (OEL TWA) [2]	50 ppm
AGW (OEL C)	760 mg/m ³
AGW (OEL C) [ppm]	200 ppm
Chemical category	skin notation
Germany - Biological limit values (TRGS 903)	
BLV	600 µg/l Parameter: Toluene - Medium: whole blood - Sampling time: immediately after exposure 75 µg/l Parameter: Toluene - Medium: urine - Sampling time: end of shift 1.5 mg/l Parameter: o-Cresol (after hydrolysis) - Medium: urine - Sampling time: for long-term exposures: at the end of the shift after several shifts 1.5 mg/l Parameter: o-Cresol (after hydrolysis) - Medium: urine - Sampling time: end of shift
Gibraltar - Occupational Exposure Limits	
OEL TWA	192 mg/m ³
OEL TWA	50 ppm
OEL STEL	384 mg/m ³
OEL STEL	100 ppm
Chemical category	skin notation
Greece - Occupational Exposure Limits	
OEL TWA	192 mg/m ³

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Toluene (108-88-3)	
OEL TWA	50 ppm
OEL STEL	384 mg/m ³
OEL STEL	100 ppm
Chemical category	skin - potential for cutaneous absorption
Hungary - Occupational Exposure Limits	
AK (OEL TWA)	190
CK (OEL STEL)	380 mg/m ³
Chemical category	Potential for cutaneous absorption
Ireland - Occupational Exposure Limits	
OEL TWA [1]	192 mg/m ³
OEL TWA [2]	50 ppm
OEL STEL	384 mg/m ³
OEL STEL	100 ppm
Chemical category	Potential for cutaneous absorption
Italy - Occupational Exposure Limits	
OEL TWA	192 mg/m ³
OEL TWA	50 ppm
Chemical category	skin - potential for cutaneous absorption
Latvia - Occupational Exposure Limits	
OEL TWA	50 mg/m ³
OEL TWA	14 ppm
OEL STEL	150 mg/m ³
OEL STEL	40 ppm
Chemical category	skin - potential for cutaneous exposure
Latvia - Biological limit values	
BEI (BLV)	1.6 g/g Kreatinin Parameter: Hippuric acid - Medium: urine - Sampling time: end of shift 0.05 mg/l Parameter: Toluene - Medium: blood - Sampling time: end of shift
Lithuania - Occupational Exposure Limits	
IPRV (OEL TWA)	192 mg/m ³
IPRV (OEL TWA) [ppm]	50 ppm
TPRV (OEL STEL)	384 mg/m ³
TPRV (OEL STEL) [ppm]	100 ppm
Chemical category	Reproductive toxin, skin notation
Luxembourg - Occupational Exposure Limits	
OEL TWA	192 mg/m ³
OEL TWA	50 ppm
OEL STEL	384 mg/m ³
OEL STEL	100 ppm
Chemical category	Possibility of significant uptake through the skin

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Toluene (108-88-3)	
Malta - Occupational Exposure Limits	
OEL TWA	192 mg/m ³
OEL TWA	50 ppm
OEL STEL	384 mg/m ³
OEL STEL	100 ppm
Chemical category	Possibility of significant uptake through the skin
Netherlands - Occupational Exposure Limits	
TGG-8u (OEL TWA)	150 mg/m ³
TGG-8u (OEL TWA) [ppm]	39 ppm
TGG-15min (OEL STEL)	384 mg/m ³
TGG-15min (OEL STEL) [ppm]	100 ppm
Poland - Occupational Exposure Limits	
NDS (OEL TWA)	100 mg/m ³
NDSch (OEL STEL)	200 mg/m ³
Portugal - Occupational Exposure Limits	
OEL TWA	192 mg/m ³ (indicative limit value)
OEL TWA	50 ppm (indicative limit value)
OEL STEL	384 mg/m ³ (indicative limit value)
OEL STEL	100 ppm (indicative limit value)
Chemical category	A4 - Not Classifiable as a Human Carcinogen, skin - potential for cutaneous exposure indicative limit value
Romania - Occupational Exposure Limits	
OEL TWA	192 mg/m ³
OEL TWA	50 ppm
OEL STEL	384 mg/m ³
OEL STEL	100 ppm
Chemical category	skin notation
Romania - Biological limit values	
BLV	2 g/l Parameter: Hippuric acid - Medium: urine - Sampling time: end of shift 3 mg/l Parameter: o-Cresol - Medium: urine - Sampling time: end of shift
Slovakia - Occupational Exposure Limits	
NPHV (OEL TWA) [1]	192 mg/m ³
NPHV (OEL TWA) [2]	50 ppm
NPHV (OEL C)	384 mg/m ³
Chemical category	Potential for cutaneous absorption

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Toluene (108-88-3)

Slovakia - Biological limit values

BLV	600 µg/l Parameter: Toluene - Medium: blood - Sampling time: end of exposure or work shift 1.5 mg/l Parameter: o-Cresol - Medium: urine - Sampling time: after all work shifts (for long-term exposure) 1.5 mg/l Parameter: o-Cresol - Medium: urine - Sampling time: end of exposure or work shift 1600 mg/g Kreatinin Parameter: Hippuric acid - Sampling time: end of exposure or work shift
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Slovenia - Occupational Exposure Limits

OEL TWA	192 mg/m ³
OEL TWA	50 ppm
OEL STEL	384 mg/m ³
OEL STEL	100 ppm
Chemical category	Category 2, Potential for cutaneous absorption

Spain - Occupational Exposure Limits

VLA-ED (OEL TWA) [1]	191 mg/m ³
VLA-ED (OEL TWA) [2]	50 ppm
VLA-EC (OEL STEL)	384 mg/m ³
VLA-EC (OEL STEL) [ppm]	100 ppm
Chemical category	skin - potential for cutaneous absorption

Spain - Biological limit values

BLV	0.6 mg/l Parameter: o-Cresol - Medium: urine - Sampling time: end of shift 0.05 mg/l Parameter: Toluene - Medium: blood - Sampling time: start of last shift of workweek 0.08 mg/l Parameter: Toluene - Medium: urine - Sampling time: end of shift
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Sweden - Occupational Exposure Limits

NGV (OEL TWA)	192 mg/m ³
NGV (OEL TWA) [ppm]	50 ppm
KGV (OEL STEL)	384 mg/m ³
KGV (OEL STEL) [ppm]	100 ppm
Chemical category	skin notation

United Kingdom - Occupational Exposure Limits

WEL TWA (OEL TWA) [1]	191 mg/m ³
WEL TWA (OEL TWA) [2]	50 ppm
WEL STEL (OEL STEL)	384 mg/m ³
WEL STEL (OEL STEL) [ppm]	100 ppm
WEL chemical category	Potential for cutaneous absorption

Norway - Occupational Exposure Limits

Grønseverdi (OEL TWA) [1]	94 mg/m ³
Grønseverdi (OEL TWA) [2]	25 ppm
Korttidsverdi (OEL STEL)	141 mg/m ³ (value calculated)

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Toluene (108-88-3)	
Korttidsverdi (OEL STEL) [ppm]	37.5 ppm (value calculated)
Chemical category	skin notation
Switzerland - Occupational Exposure Limits	
MAK (OEL TWA) [1]	190 mg/m ³
MAK (OEL TWA) [2]	50 ppm
KZGW (OEL STEL)	760 mg/m ³
KZGW (OEL STEL) [ppm]	200 ppm
Chemical category	skin notation, Category 2 reproductive toxin
Switzerland - Biological limit values	
BAT (BLV)	600 µg/l Parameter: Toluene - Medium: whole blood - Sampling time: end of shift 6.48 µmol/l Parameter: Toluene - Medium: whole blood - Sampling time: end of shift 2 g/g Kreatinin Parameter: Hippuric acid - Medium: urine - Sampling time: end of shift, and after several shifts (for long-term exposures) Parameter: Hippuric acid - Medium: urine - Sampling time: end of shift, and after several shifts (for long-term exposures) 0.5 mg/l Parameter: o-Cresol - Medium: urine - Sampling time: end of shift, and after several shifts (for long-term exposures) 4.62 µmol/l Parameter: o-Cresol - Medium: urine - Sampling time: end of shift, and after several shifts (for long-term exposures) 75 µg/l Parameter: Toluol - Medium: urine - Sampling time: end of shift
Turkey - Occupational Exposure Limits	
OEL TWA	192 mg/m ³
OEL TWA	50 ppm
OEL STEL	384 mg/m ³
OEL STEL	100 ppm
Chemical category	skin notation
USA - ACGIH - Occupational Exposure Limits	
Local name	Toluene
ACGIH OEL TWA [ppm]	20 ppm
Remark (ACGIH)	TLV® Basis: CNS, visual & hearing impair; female repro system eff; pregnancy loss. Notations: OTO; A4 (Not classifiable as a Human Carcinogen); BEI
ACGIH chemical category	Not Classifiable as a Human Carcinogen
Regulatory reference	ACGIH 2024
USA - ACGIH - Biological Exposure Indices	
Local name	Toluene
BEI (BLV)	0.02 mg/l Parameter: Toluene - Medium: blood - Sampling time: prior to last shift of workweek 0.03 mg/l Parameter: Toluene - Medium: urine - Sampling time: end of shift 0.3 mg/g Kreatinin Parameter: o-Cresol with hydrolysis - Medium: urine - Sampling time: end of shift (background)
Regulatory reference	ACGIH 2024
Ethylbenzene (100-41-4)	
EU - Indicative Occupational Exposure Limit (IOEL)	
IOEL TWA	442 mg/m ³

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Ethylbenzene (100-41-4)	
IOEL TWA [ppm]	100 ppm
IOEL STEL	884 mg/m ³
IOEL STEL [ppm]	200 ppm
Notes	Possibility of significant uptake through the skin
Austria - Occupational Exposure Limits	
MAK (OEL TWA)	440 mg/m ³
MAK (OEL TWA) [ppm]	100 ppm
MAK (OEL STEL)	880 mg/m ³
MAK (OEL STEL) [ppm]	200 ppm
Chemical category	skin notation
Belgium - Occupational Exposure Limits	
OEL TWA	442 mg/m ³
OEL TWA	100 ppm
OEL STEL	551 mg/m ³
OEL STEL	125 ppm
Chemical category	Skin, skin notation
Bulgaria - Occupational Exposure Limits	
OEL TWA	435 mg/m ³
OEL STEL	545 mg/m ³
Bulgaria - Biological limit values	
BLV	2000 mg/g Kreatinin Parameter: Mandelic acid and Phenylglyoxylic acid - total - Medium: urine - Sampling time: at the end of exposure or end of work shift (possible significant absorption through the skin)
Croatia - Occupational Exposure Limits	
GVI (OEL TWA) [1]	442 mg/m ³
GVI (OEL TWA) [2]	100 ppm
KGVI (OEL STEL)	884 mg/m ³
KGVI (OEL STEL) [ppm]	200 ppm
Chemical category	skin notation
Croatia - Biological limit values	
BLV	1.5 mg/l Parameter: Ethylbenzene - Medium: blood - Sampling time: during exposure 1.5 g/g Kreatinin Parameter: Mandelic acid - Medium: urine - Sampling time: at the end of the work shift and at the end of the working week (calculated on the average Creatinine value of 1.2 g/L urine)
Cyprus - Occupational Exposure Limits	
OEL TWA	442 mg/m ³
OEL TWA	100 ppm
OEL STEL	884 mg/m ³
OEL STEL	200 ppm
Chemical category	Skin-potential for cutaneous absorption

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Ethylbenzene (100-41-4)	
Czech Republic - Occupational Exposure Limits	
PEL (OEL TWA)	200 mg/m ³
Chemical category	Potential for cutaneous absorption
Czech Republic - Biological limit values	
BLV	1100 µmol/mmol Creatinine Parameter: Mandelic acid - Medium: urine - Sampling time: end of shift 1500 mg/g Kreatinin Parameter: Mandelic acid - Medium: urine - Sampling time: end of shift
Denmark - Occupational Exposure Limits	
OEL TWA [1]	217 mg/m ³
OEL TWA [2]	50 ppm
OEL STEL	434 mg/m ³
OEL STEL	100 ppm
Chemical category	Potential for cutaneous absorption
Estonia - Occupational Exposure Limits	
OEL TWA	442 mg/m ³
OEL TWA	100 ppm
OEL STEL	884 mg/m ³
OEL STEL	200 ppm
Chemical category	skin notation, Sensitizer
Finland - Occupational Exposure Limits	
HTP (OEL TWA) [1]	220 mg/m ³
HTP (OEL TWA) [2]	50 ppm
HTP (OEL STEL)	880 mg/m ³
HTP (OEL STEL) [ppm]	200 ppm
Chemical category	Potential for cutaneous absorption
Finland - Biological limit values	
BLV	Parameter: Mandelic acid - Medium: urine - Sampling time: after the shift after a working week or exposure period
France - Occupational Exposure Limits	
VME (OEL TWA)	88.4 mg/m ³ TWA [VME] (restrictive limit)
VME (OEL TWA) [ppm]	20 ppm TWA [VME] (restrictive limit)
VLE (OEL C/STEL)	442 mg/m ³ STEL [VLCT] (restrictive limit)
VLE (OEL C/STEL) [ppm]	100 ppm STEL [VLCT] (restrictive limit)
Chemical category	Risk of cutaneous absorption
France - Biological limit values	
BLV	Parameter: Mandelic acid - Medium: urine - Sampling time: end of shift at end of workweek (per the Authority, the values for this substance must be decided and/or determined on a case by case basis. Guidance for the calculation of and interpretation of values is provided in the source)

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Ethylbenzene (100-41-4)	
Germany - Occupational Exposure Limits (TRGS 900)	
AGW (OEL TWA) [1]	88 mg/m³
AGW (OEL TWA) [2]	20 ppm
AGW (OEL C)	176 mg/m³
AGW (OEL C) [ppm]	40 ppm
Chemical category	skin notation
Germany - Biological limit values (TRGS 903)	
BLV	250 mg/g Kreatinin Parameter: Mandelic acid plus Phenylglyoxylic acid - Medium: urine - Sampling time: end of shift
Gibraltar - Occupational Exposure Limits	
OEL TWA	442 mg/m³
OEL TWA	100 ppm
OEL STEL	884 mg/m³
OEL STEL	200 ppm
Chemical category	skin notation
Greece - Occupational Exposure Limits	
OEL TWA	435 mg/m³
OEL TWA	100 ppm
OEL STEL	545 mg/m³
OEL STEL	125 ppm
Hungary - Occupational Exposure Limits	
AK (OEL TWA)	442 mg/m³
CK (OEL STEL)	884 mg/m³
Chemical category	Potential for cutaneous absorption
Ireland - Occupational Exposure Limits	
OEL TWA [1]	442 mg/m³
OEL TWA [2]	100 ppm
OEL STEL	884 mg/m³
OEL STEL	200 ppm
Chemical category	Potential for cutaneous absorption
Italy - Occupational Exposure Limits	
OEL TWA	442 mg/m³
OEL TWA	100 ppm
OEL STEL	884 mg/m³
OEL STEL	200 ppm
Chemical category	skin - potential for cutaneous absorption
Latvia - Occupational Exposure Limits	
OEL TWA	442 mg/m³
OEL TWA	100 ppm

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Ethylbenzene (100-41-4)	
OEL STEL	884 mg/m ³
OEL STEL	200 ppm
Chemical category	skin - potential for cutaneous exposure
Lithuania - Occupational Exposure Limits	
IPRV (OEL TWA)	442 mg/m ³
IPRV (OEL TWA) [ppm]	100 ppm
TPRV (OEL STEL)	884 mg/m ³
TPRV (OEL STEL) [ppm]	200 ppm
Chemical category	skin notation
Luxembourg - Occupational Exposure Limits	
OEL TWA	442 mg/m ³
OEL TWA	100 ppm
OEL STEL	884 mg/m ³
OEL STEL	200 ppm
Chemical category	Possibility of significant uptake through the skin
Malta - Occupational Exposure Limits	
OEL TWA	442 mg/m ³
OEL TWA	100 ppm
OEL STEL	884 mg/m ³
OEL STEL	200 ppm
Chemical category	Possibility of significant uptake through the skin
Netherlands - Occupational Exposure Limits	
TGG-8u (OEL TWA)	215 mg/m ³
TGG-8u (OEL TWA) [ppm]	48.6 ppm
TGG-15min (OEL STEL)	430 mg/m ³
TGG-15min (OEL STEL) [ppm]	97.3 ppm
MAC chemical category	skin notation
Poland - Occupational Exposure Limits	
NDS (OEL TWA)	200 mg/m ³
NDSch (OEL STEL)	400 mg/m ³
Portugal - Occupational Exposure Limits	
OEL TWA	442 mg/m ³ (indicative limit value)
OEL TWA	100 ppm (indicative limit value)
OEL STEL	884 mg/m ³ (indicative limit value)
OEL STEL	200 ppm (indicative limit value)
Chemical category	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans, skin - potential for cutaneous exposure indicative limit value
Romania - Occupational Exposure Limits	
OEL TWA	442 mg/m ³

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Ethylbenzene (100-41-4)	
OEL TWA	100 ppm
OEL STEL	884 mg/m ³
OEL STEL	200 ppm
Chemical category	skin notation
Romania - Biological limit values	
BLV	1.5 g/g Kreatinin Parameter: Mandelic acid - Medium: urine - Sampling time: end of work week
Slovakia - Occupational Exposure Limits	
NPHV (OEL TWA) [1]	442 mg/m ³
NPHV (OEL TWA) [2]	100 ppm
NPHV (OEL C)	884 mg/m ³
Chemical category	Potential for cutaneous absorption
Slovakia - Biological limit values	
BLV	12 mg/l Parameter: 2 and 4-Ethylphenol - Medium: urine - Sampling time: end of exposure or work shift (also after all work shifts for long-term exposure) 1600 mg/l Parameter: Mandelic acid and Phenylglycolic acid - Medium: urine - Sampling time: end of exposure or work shift (also after all work shifts for long-term exposure)
Slovenia - Occupational Exposure Limits	
OEL TWA	442 mg/m ³
OEL TWA	100 ppm
OEL STEL	884 mg/m ³
OEL STEL	200 ppm
Chemical category	Potential for cutaneous absorption
Spain - Occupational Exposure Limits	
VLA-ED (OEL TWA) [1]	441 mg/m ³
VLA-ED (OEL TWA) [2]	100 ppm
VLA-EC (OEL STEL)	884 mg/m ³
VLA-EC (OEL STEL) [ppm]	200 ppm
Chemical category	skin - potential for cutaneous absorption
Spain - Biological limit values	
BLV	700 mg/g Kreatinin Parameter: Mandelic acid plus Phenylglyoxylic acid - Medium: urine - Sampling time: end of workweek
Sweden - Occupational Exposure Limits	
NGV (OEL TWA)	220 mg/m ³
NGV (OEL TWA) [ppm]	50 ppm
KGV (OEL STEL)	884 mg/m ³
KGV (OEL STEL) [ppm]	200 ppm
Chemical category	skin notation
United Kingdom - Occupational Exposure Limits	
WEL TWA (OEL TWA) [1]	441 mg/m ³
WEL TWA (OEL TWA) [2]	100 ppm

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Ethylbenzene (100-41-4)	
WEL STEL (OEL STEL)	552 mg/m ³
WEL STEL (OEL STEL) [ppm]	125 ppm
WEL chemical category	Potential for cutaneous absorption
Norway - Occupational Exposure Limits	
Grenseverdi (OEL TWA) [1]	20 mg/m ³
Grenseverdi (OEL TWA) [2]	5 ppm
Korttidsverdi (OEL STEL)	30 mg/m ³ (value calculated)
Korttidsverdi (OEL STEL) [ppm]	10 ppm (value calculated)
Chemical category	skin notation, Carcinogen
Switzerland - Occupational Exposure Limits	
MAK (OEL TWA) [1]	435 mg/m ³
MAK (OEL TWA) [2]	100 ppm
KZGW (OEL STEL)	435 mg/m ³
KZGW (OEL STEL) [ppm]	100 ppm
Chemical category	skin notation
Switzerland - Biological limit values	
BAT (BLV)	600 mg/g Kreatinin Parameter: Mandelic acid and Phenylglyoxylacid - Medium: urine - Sampling time: end of shift (see also Styrene)
Turkey - Occupational Exposure Limits	
OEL TWA	442 mg/m ³
OEL TWA	100 ppm
OEL STEL	884 mg/m ³
OEL STEL	200 ppm
Chemical category	skin notation
USA - ACGIH - Occupational Exposure Limits	
Local name	Ethylbenzene
ACGIH OEL TWA [ppm]	20 ppm
Remark (ACGIH)	TLV® Basis: URT & eye irr; ototoxicity; kidney eff; CNS impair. Notations: OTO (Ototoxicant); A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans); BEI
ACGIH chemical category	Confirmed Animal Carcinogen with Unknown Relevance to Humans
Regulatory reference	ACGIH 2023
USA - ACGIH - Biological Exposure Indices	
Local name	ETHYLBENZENE
BEI (BLV)	0.15 g/g Kreatinin Parameter: Sum of mandelic acid and phenylglyoxylic acid (with hydrolysis) - Medium: urine - Sampling time: End of shift - Notations: Ns
Regulatory reference	ACGIH 2023
Cumene (98-82-8)	
EU - Indicative Occupational Exposure Limit (IOEL)	
IOEL TWA	100 mg/m ³

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Cumene (98-82-8)	
IOEL TWA [ppm]	20 ppm
IOEL STEL	250 mg/m ³
IOEL STEL [ppm]	50 ppm
Austria - Occupational Exposure Limits	
MAK (OEL TWA)	100 mg/m ³
MAK (OEL TWA) [ppm]	20 ppm
MAK (OEL STEL)	250 mg/m ³
MAK (OEL STEL) [ppm]	50 ppm
Chemical category	skin notation
Belgium - Occupational Exposure Limits	
OEL TWA	100 mg/m ³
OEL TWA	20 ppm
OEL STEL	250 mg/m ³
OEL STEL	50 ppm
Chemical category	Skin, skin notation
Bulgaria - Occupational Exposure Limits	
OEL TWA	50 mg/m ³ (exposure monitoring should take into account the relevant biological monitoring methods of the Scientific Committee on Occupational Exposure Limits (SCOEL) under Annex 2)
OEL TWA	10 ppm (exposure monitoring should take into account the relevant biological monitoring methods of the Scientific Committee on Occupational Exposure Limits (SCOEL) under Annex 2)
OEL STEL	250 mg/m ³ (exposure monitoring should take into account the relevant biological monitoring methods of the Scientific Committee on Occupational Exposure Limits (SCOEL) under Annex 2)
OEL STEL	50 ppm (exposure monitoring should take into account the relevant biological monitoring methods of the Scientific Committee on Occupational Exposure Limits (SCOEL) under Annex 2)
Bulgaria - Biological limit values	
BLV	7 mg/g Kreatinin Parameter: 2-Phenol-2 propanol - Medium: urine - Sampling time: up to two hours after the end of work shift (possible significant absorption through the skin)
Croatia - Occupational Exposure Limits	
GVI (OEL TWA) [1]	50 mg/m ³ (during the monitoring of exposure the relevant value of biological monitoring shall be taken into account as suggested by the Scientific Committee for Occupational Exposure Limits to Chemical Agents (SCOEL) (Cumene))
GVI (OEL TWA) [2]	10 ppm (during the monitoring of exposure the relevant value of biological monitoring shall be taken into account as suggested by the Scientific Committee for Occupational Exposure Limits to Chemical Agents (SCOEL) (Cumene))
KGVI (OEL STEL)	250 mg/m ³ (during the monitoring of exposure the relevant value of biological monitoring shall be taken into account as suggested by the Scientific Committee for Occupational Exposure Limits to Chemical Agents (SCOEL) (Cumene))
KGVI (OEL STEL) [ppm]	50 ppm
Chemical category	skin notation during the monitoring of exposure the relevant value of biological monitoring shall be taken into account as suggested by the Scientific Committee for Occupational Exposure Limits to Chemical Agents (SCOEL)

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Cumene (98-82-8)	
Cyprus - Occupational Exposure Limits	
OEL TWA	50 mg/m ³ (inhalable fraction)
OEL TWA	10 ppm (inhalable fraction)
OEL STEL	250 mg/m ³ (inhalable fraction)
OEL STEL	50 ppm (inhalable fraction)
Chemical category	Skin-potential for cutaneous absorption
Czech Republic - Occupational Exposure Limits	
PEL (OEL TWA)	100 mg/m ³
Chemical category	Potential for cutaneous absorption
Denmark - Occupational Exposure Limits	
OEL TWA [1]	100 mg/m ³
OEL TWA [2]	20 ppm
OEL STEL	200 mg/m ³
OEL STEL	40 ppm
Chemical category	Potential for cutaneous absorption
Estonia - Occupational Exposure Limits	
OEL TWA	50 mg/m ³
OEL TWA	10 ppm
OEL STEL	250 mg/m ³
OEL STEL	50 ppm
Chemical category	skin notation
Finland - Occupational Exposure Limits	
HTP (OEL TWA) [1]	100 mg/m ³
HTP (OEL TWA) [2]	20 ppm
HTP (OEL STEL)	250 mg/m ³
HTP (OEL STEL) [ppm]	50 ppm
Chemical category	Potential for cutaneous absorption
France - Occupational Exposure Limits	
VME (OEL TWA)	100 mg/m ³
VME (OEL TWA) [ppm]	20 ppm
VLE (OEL C/STEL)	250 mg/m ³
VLE (OEL C/STEL) [ppm]	50 ppm
Chemical category	Carcinogen category 1B, Risk of cutaneous absorption
Germany - Occupational Exposure Limits (TRGS 900)	
AGW (OEL TWA) [1]	50 mg/m ³
AGW (OEL TWA) [2]	10 ppm
AGW (OEL C)	200 mg/m ³
AGW (OEL C) [ppm]	40 ppm
Chemical category	skin notation

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Cumene (98-82-8)	
Germany - Biological limit values (TRGS 903)	
BLV	10 mg/g Kreatinin Parameter: 2-Phenyl-2-propanol (after hydrolysis) - Medium: urine - Sampling time: end of shift
Gibraltar - Occupational Exposure Limits	
OEL TWA	100 mg/m ³
OEL TWA	20 ppm
OEL STEL	250 mg/m ³
OEL STEL	50 ppm
Chemical category	skin notation
Greece - Occupational Exposure Limits	
OEL TWA	50 mg/m ³ (during the monitoring of the exposure, the relevant biological monitoring values recommended by the Scientific Committee on Occupational Exposure Limit Values (SCOEL) should be taken under consideration)
OEL TWA	10 ppm (during the monitoring of the exposure, the relevant biological monitoring values recommended by the Scientific Committee on Occupational Exposure Limit Values (SCOEL) should be taken under consideration)
OEL STEL	250 mg/m ³ (during the monitoring of the exposure, the relevant biological monitoring values recommended by the Scientific Committee on Occupational Exposure Limit Values (SCOEL) should be taken under consideration)
OEL STEL	50 ppm (during the monitoring of the exposure, the relevant biological monitoring values recommended by the Scientific Committee on Occupational Exposure Limit Values (SCOEL) should be taken under consideration)
Chemical category	skin - potential for cutaneous absorption during the monitoring of the exposure, the relevant biological monitoring values recommended by the Scientific Committee on Occupational Exposure Limit Values (SCOEL) should be taken under consideration
Hungary - Occupational Exposure Limits	
AK (OEL TWA)	100 mg/m ³
CK (OEL STEL)	250 mg/m ³
Chemical category	Potential for cutaneous absorption
Ireland - Occupational Exposure Limits	
OEL TWA [1]	100 mg/m ³
OEL TWA [2]	20 ppm
OEL STEL	250 mg/m ³
OEL STEL	50 ppm
Chemical category	Potential for cutaneous absorption
Italy - Occupational Exposure Limits	
OEL TWA	100 mg/m ³
OEL TWA	20 ppm
OEL STEL	250 mg/m ³
OEL STEL	50 ppm
Chemical category	skin - potential for cutaneous absorption
Latvia - Occupational Exposure Limits	
OEL TWA	100 mg/m ³

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Cumene (98-82-8)	
OEL TWA	20 ppm
OEL STEL	250 mg/m ³
OEL STEL	50 ppm
Chemical category	skin - potential for cutaneous exposure
Latvia - Biological limit values	
BEI (BLV)	7 µg/g Kreatinin Parameter: Cumene - Medium: urine - Sampling time: no later than two hours after the end of the shift
Lithuania - Occupational Exposure Limits	
IPRV (OEL TWA)	50 mg/m ³ (in addition to the indicative occupational exposure limit values, biological monitoring values must be taken into account when monitoring exposure)
IPRV (OEL TWA) [ppm]	10 ppm (in addition to the indicative occupational exposure limit values, biological monitoring values must be taken into account when monitoring exposure)
TPRV (OEL STEL)	170 mg/m ³ (in addition to the indicative occupational exposure limit values, biological monitoring values must be taken into account when monitoring exposure)
TPRV (OEL STEL) [ppm]	35 ppm (in addition to the indicative occupational exposure limit values, biological monitoring values must be taken into account when monitoring exposure)
Chemical category	skin notation
Luxembourg - Occupational Exposure Limits	
OEL TWA	50 mg/m ³
OEL TWA	10 ppm
OEL STEL	250 mg/m ³
OEL STEL	50 ppm
Chemical category	Possibility of significant uptake through the skin
Malta - Occupational Exposure Limits	
OEL TWA	50 mg/m ³
OEL TWA	10 ppm
OEL STEL	250 mg/m ³
OEL STEL	50 ppm
Chemical category	Possibility of significant uptake through the skin
Netherlands - Occupational Exposure Limits	
TGG-8u (OEL TWA)	100 mg/m ³
TGG-8u (OEL TWA) [ppm]	10 ppm
TGG-15min (OEL STEL)	250 mg/m ³
TGG-15min (OEL STEL) [ppm]	50 ppm
MAC chemical category	skin notation
Poland - Occupational Exposure Limits	
NDS (OEL TWA)	100 mg/m ³
NDSch (OEL STEL)	250 mg/m ³
Portugal - Occupational Exposure Limits	
OEL TWA	50 mg/m ³ (indicative limit value)
OEL TWA	10 ppm (indicative limit value)

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Cumene (98-82-8)	
OEL STEL	250 mg/m³ (indicative limit value)
OEL STEL	50 ppm (indicative limit value)
Chemical category	skin - potential for cutaneous exposure indicative limit value
Romania - Occupational Exposure Limits	
OEL TWA	100 mg/m³
OEL TWA	20 ppm
OEL STEL	250 mg/m³
OEL STEL	50 ppm
Chemical category	skin notation
Slovakia - Occupational Exposure Limits	
NPHV (OEL TWA) [1]	500 mg/m³
NPHV (OEL TWA) [2]	20 ppm
NPHV (OEL C)	250 mg/m³
Chemical category	Potential for cutaneous absorption
Slovakia - Biological limit values	
BLV	10.6 mg/l Parameter: 2-Phenylpropane - Medium: urine - Sampling time: end of exposure or work shift
Slovenia - Occupational Exposure Limits	
OEL TWA	50 mg/m³
OEL TWA	10 ppm
OEL STEL	250 mg/m³
OEL STEL	50 ppm
Chemical category	Potential for cutaneous absorption
Spain - Occupational Exposure Limits	
VLA-ED (OEL TWA) [1]	100 mg/m³
VLA-ED (OEL TWA) [2]	20 ppm
VLA-EC (OEL STEL)	250 mg/m³
VLA-EC (OEL STEL) [ppm]	50 ppm
Chemical category	C1B, skin - potential for cutaneous absorption
Spain - Biological limit values	
BLV	7 mg/g Kreatinin Parameter: 2-Phenyl-2-propanol - Medium: urine - Sampling time: end of shift (with hydrolysis)
Sweden - Occupational Exposure Limits	
NGV (OEL TWA)	120 mg/m³
NGV (OEL TWA) [ppm]	25 ppm
KGV (OEL STEL)	250 mg/m³
KGV (OEL STEL) [ppm]	50 ppm
Chemical category	skin notation
United Kingdom - Occupational Exposure Limits	
WEL TWA (OEL TWA) [1]	125 mg/m³

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Cumene (98-82-8)

WEL TWA (OEL TWA) [2]	25 ppm
WEL STEL (OEL STEL)	375 mg/m ³
WEL STEL (OEL STEL) [ppm]	75 ppm
WEL chemical category	Potential for cutaneous absorption

Norway - Occupational Exposure Limits

Grenseverdi (OEL TWA) [1]	50 mg/m ³
Grenseverdi (OEL TWA) [2]	10 ppm
Korttidsverdi (OEL STEL)	250 mg/m ³ (value from the regulation)
Korttidsverdi (OEL STEL) [ppm]	50 ppm (value from the regulation)
Chemical category	skin notation, Carcinogen

Switzerland - Occupational Exposure Limits

MAK (OEL TWA) [1]	100 mg/m ³
MAK (OEL TWA) [2]	20 ppm
KZGW (OEL STEL)	400 mg/m ³
KZGW (OEL STEL) [ppm]	80 ppm
Chemical category	skin notation, Category C2 carcinogen

Switzerland - Biological limit values

BAT (BLV)	20 mg/g Kreatinin Parameter: 2-Phenyl-2-propanol after hydrolysis - Medium: urine - Sampling time: end of shift Parameter: 2-Phenyl-2-propanol after hydrolysis - Medium: urine - Sampling time: end of shift
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Turkey - Occupational Exposure Limits

OEL TWA	100 mg/m ³
OEL TWA	20 ppm
OEL STEL	250 mg/m ³
OEL STEL	50 ppm
Chemical category	skin notation

USA - ACGIH - Occupational Exposure Limits

Local name	Cumene
ACGIH OEL TWA [ppm]	50 ppm
Remark (ACGIH)	TLV® Basis: URT adenoma; neurological eff. Notations: A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans)
ACGIH chemical category	Confirmed Animal Carcinogen with Unknown Relevance to Humans
Regulatory reference	ACGIH 2023

Methyl ethyl ketone (78-93-3)

EU - Indicative Occupational Exposure Limit (IOEL)

IOEL TWA	600 mg/m ³
IOEL TWA [ppm]	200 ppm
IOEL STEL	900 mg/m ³
IOEL STEL [ppm]	300 ppm

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Methyl ethyl ketone (78-93-3)	
Austria - Occupational Exposure Limits	
MAK (OEL TWA)	295 mg/m ³
MAK (OEL TWA) [ppm]	100 ppm
MAK (OEL STEL)	590 mg/m ³
MAK (OEL STEL) [ppm]	200 ppm
Chemical category	skin notation
Belgium - Occupational Exposure Limits	
OEL TWA	600 mg/m ³
OEL TWA	200 ppm
OEL STEL	900 mg/m ³
OEL STEL	300 ppm
Bulgaria - Occupational Exposure Limits	
OEL TWA	590 mg/m ³
OEL STEL	885 mg/m ³
Croatia - Occupational Exposure Limits	
GVI (OEL TWA) [1]	600 mg/m ³
GVI (OEL TWA) [2]	200 ppm
KGVI (OEL STEL)	900 mg/m ³
KGVI (OEL STEL) [ppm]	300 ppm
Croatia - Biological limit values	
BLV	2.6 mg/g Kreatinin Parameter: Ethyl methyl ketone - Medium: urine - Sampling time: at the end of the work shift (calculated on the average Creatinine value of 1.2 g/L urine)
Cyprus - Occupational Exposure Limits	
OEL TWA	600 mg/m ³
OEL TWA	200 ppm
OEL STEL	900 mg/m ³
OEL STEL	300 ppm
Czech Republic - Occupational Exposure Limits	
PEL (OEL TWA)	600 mg/m ³
Denmark - Occupational Exposure Limits	
OEL TWA [1]	145 mg/m ³
OEL TWA [2]	50 ppm
OEL STEL	290 mg/m ³
OEL STEL	100 ppm
Chemical category	Potential for cutaneous absorption
Estonia - Occupational Exposure Limits	
OEL TWA	600 mg/m ³
OEL TWA	200 ppm
OEL STEL	900 mg/m ³

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Methyl ethyl ketone (78-93-3)	
OEL STEL	300 ppm
Finland - Occupational Exposure Limits	
HTP (OEL TWA) [1]	60 mg/m³
HTP (OEL TWA) [2]	20 ppm
HTP (OEL STEL)	300 mg/m³
HTP (OEL STEL) [ppm]	100 ppm
Chemical category	Potential for cutaneous absorption
France - Occupational Exposure Limits	
VME (OEL TWA)	600 mg/m³
VME (OEL TWA) [ppm]	200 ppm
VLE (OEL C/STEL)	900 mg/m³
VLE (OEL C/STEL) [ppm]	300 ppm
Chemical category	Risk of cutaneous absorption
France - Biological limit values	
BLV	Parameter: Methyl ethyl ketone - Medium: urine - Sampling time: end of shift (per the Authority, the values for this substance must be decided and/or determined on a case by case basis. Guidance for the calculation of and interpretation of values is provided in the source)
Germany - Occupational Exposure Limits (TRGS 900)	
AGW (OEL TWA) [1]	600 mg/m³
AGW (OEL TWA) [2]	200 ppm
AGW (OEL C)	600 mg/m³
AGW (OEL C) [ppm]	200 ppm
Chemical category	skin notation
Germany - Biological limit values (TRGS 903)	
BLV	2 mg/l Parameter: 2-Butanone - Medium: urine - Sampling time: end of shift
Gibraltar - Occupational Exposure Limits	
OEL TWA	600 mg/m³
OEL TWA	200 ppm
OEL STEL	900 mg/m³
OEL STEL	300 ppm
Greece - Occupational Exposure Limits	
OEL TWA	600 mg/m³
OEL TWA	200 ppm
OEL STEL	900 mg/m³
OEL STEL	300 ppm
Hungary - Occupational Exposure Limits	
AK (OEL TWA)	600 mg/m³
CK (OEL STEL)	900 mg/m³
Chemical category	Potential for cutaneous absorption

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Methyl ethyl ketone (78-93-3)

Ireland - Occupational Exposure Limits

OEL TWA [1]	600 mg/m ³
OEL TWA [2]	200 ppm
OEL STEL	900 mg/m ³
OEL STEL	300 ppm
Chemical category	Potential for cutaneous absorption

Italy - Occupational Exposure Limits

OEL TWA	600 mg/m ³
OEL TWA	200 ppm
OEL STEL	900 mg/m ³
OEL STEL	300 ppm

Latvia - Occupational Exposure Limits

OEL TWA	200 mg/m ³
OEL TWA	67 ppm
OEL STEL	900 mg/m ³
OEL STEL	300 ppm

Luxembourg - Occupational Exposure Limits

OEL TWA	600 mg/m ³
OEL TWA	200 ppm
OEL STEL	900 mg/m ³
OEL STEL	300 ppm

Malta - Occupational Exposure Limits

OEL TWA	600 mg/m ³
OEL TWA	200 ppm
OEL STEL	900 mg/m ³
OEL STEL	300 ppm

Netherlands - Occupational Exposure Limits

TGG-8u (OEL TWA)	590 mg/m ³
TGG-8u (OEL TWA) [ppm]	197 ppm
TGG-15min (OEL STEL)	900 mg/m ³
TGG-15min (OEL STEL) [ppm]	300 ppm
MAC chemical category	skin notation

Poland - Occupational Exposure Limits

NDS (OEL TWA)	590
NDSCh (OEL STEL)	900

Portugal - Occupational Exposure Limits

OEL TWA	600 mg/m ³ (indicative limit value)
OEL TWA	200 ppm (indicative limit value)
OEL STEL	900 mg/m ³ (indicative limit value)

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Methyl ethyl ketone (78-93-3)	
OEL STEL	300 ppm (indicative limit value)
Romania - Occupational Exposure Limits	
OEL TWA	600 mg/m ³
OEL TWA	200 ppm
OEL STEL	900 mg/m ³
OEL STEL	300 ppm
Romania - Biological limit values	
BLV	2 mg/l Parameter: Methyleneethylketone - Medium: urine - Sampling time: end of shift
Slovakia - Occupational Exposure Limits	
NPHV (OEL TWA) [1]	600 mg/m ³
NPHV (OEL TWA) [2]	200 ppm
NPHV (OEL C)	900 mg/m ³
Slovenia - Occupational Exposure Limits	
OEL TWA	600 mg/m ³
OEL TWA	200 ppm
OEL STEL	900 mg/m ³
OEL STEL	300 ppm
Chemical category	Potential for cutaneous absorption
Spain - Occupational Exposure Limits	
VLA-ED (OEL TWA) [1]	600 mg/m ³
VLA-ED (OEL TWA) [2]	200 ppm
VLA-EC (OEL STEL)	900 mg/m ³
VLA-EC (OEL STEL) [ppm]	300 ppm
Spain - Biological limit values	
BLV	2 mg/l Parameter: Methyl ethyl ketone - Medium: urine - Sampling time: end of shift
Sweden - Occupational Exposure Limits	
NGV (OEL TWA)	150 mg/m ³
NGV (OEL TWA) [ppm]	50 ppm
KGV (OEL STEL)	900 mg/m ³
KGV (OEL STEL) [ppm]	600 ppm
United Kingdom - Occupational Exposure Limits	
WEL TWA (OEL TWA) [1]	600 mg/m ³
WEL TWA (OEL TWA) [2]	200 ppm
WEL STEL (OEL STEL)	899 mg/m ³
WEL STEL (OEL STEL) [ppm]	300 ppm
WEL chemical category	Potential for cutaneous absorption
Norway - Occupational Exposure Limits	
Grønseverdi (OEL TWA) [1]	220 mg/m ³
Grønseverdi (OEL TWA) [2]	75 ppm

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Methyl ethyl ketone (78-93-3)	
Korttidsverdi (OEL STEL)	275 mg/m³ (value calculated)
Korttidsverdi (OEL STEL) [ppm]	112.5 ppm (value calculated)
Switzerland - Occupational Exposure Limits	
MAK (OEL TWA) [1]	590 mg/m³
MAK (OEL TWA) [2]	200 ppm
KZGW (OEL STEL)	590 mg/m³
KZGW (OEL STEL) [ppm]	200 ppm
Chemical category	skin notation
Switzerland - Biological limit values	
BAT (BLV)	2 mg/l Parameter: 2-Butanone - Medium: urine - Sampling time: end of shift, before subsequent shift or 16 hour 27.7 µmol/l Parameter: 2-Butanone - Medium: urine - Sampling time: end of shift, before subsequent shift or 16 hour
Turkey - Occupational Exposure Limits	
OEL TWA	600 mg/m³
OEL TWA	200 ppm
OEL STEL	900 mg/m³
OEL STEL	300 ppm
USA - ACGIH - Occupational Exposure Limits	
Local name	Methyl ethyl ketone (MEK)
ACGIH OEL TWA [ppm]	200 ppm
ACGIH OEL STEL [ppm]	300 ppm
Remark (ACGIH)	TLV® Basis: Embryo/fetal dam; URT irr; headache; dizziness. Notations: Skin; BEI
Regulatory reference	ACGIH 2024
USA - ACGIH - Biological Exposure Indices	
Local name	Methyl ethyl ketone
BEI (BLV)	2 mg/l Parameter: MEK - Medium: urine - Sampling time: end of shift (nonspecific)
Regulatory reference	ACGIH 2024
Stoddard solvent (8052-41-3)	
Belgium - Occupational Exposure Limits	
OEL TWA	533 mg/m³
OEL TWA	100 ppm
Czech Republic - Occupational Exposure Limits	
PEL (OEL TWA)	200 mg/m³
Denmark - Occupational Exposure Limits	
OEL TWA [1]	145 mg/m³ (= <20% Aromatic compounds)
OEL TWA [2]	25 ppm (= <20% Aromatic compounds)
OEL STEL	290 mg/m³ (= <20% Aromatic compounds)
OEL STEL	50 ppm (= <20% Aromatic compounds)

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Stoddard solvent (8052-41-3)	
Estonia - Occupational Exposure Limits	
OEL TWA	300 mg/m ³
OEL TWA	50 ppm
OEL STEL	600 mg/m ³
OEL STEL	100 ppm
Greece - Occupational Exposure Limits	
OEL TWA	575 mg/m ³
OEL TWA	100 ppm
OEL STEL	720 mg/m ³
OEL STEL	125 ppm
Hungary - Occupational Exposure Limits	
Chemical category	Muta1B
Ireland - Occupational Exposure Limits	
OEL TWA [1]	573 mg/m ³
OEL TWA [2]	100 ppm
Chemical category	Carc1B
Lithuania - Occupational Exposure Limits	
IPRV (OEL TWA)	300 mg/m ³
IPRV (OEL TWA) [ppm]	50 ppm (approximate value)
TPRV (OEL STEL)	600 mg/m ³ (used as paint solvents and thinners, Ligroine containing 17-22% of Aromatic compounds (about 15-20% by volume) and the boiling range is approximately 150-200°C, the approximate size of the ppm calculated as White spirit containing 22% of Aromatic substances)
TPRV (OEL STEL) [ppm]	100 ppm (approximate value)
Poland - Occupational Exposure Limits	
NDS (OEL TWA)	300 mg/m ³ (varnish)
NDSCh (OEL STEL)	900 mg/m ³ (varnish (Benzin))
Portugal - Occupational Exposure Limits	
OEL TWA	100 ppm
Sweden - Occupational Exposure Limits	
NGV (OEL TWA)	300 mg/m ³ (<2% aromatics) 175 mg/m ³ (2-25% aromatics)
NGV (OEL TWA) [ppm]	50 ppm (<2% aromatics) 30 ppm (2-25% aromatics)
KGV (OEL STEL)	600 mg/m ³ (<2% aromatics) 350 mg/m ³ (2-25% aromatics)
KGV (OEL STEL) [ppm]	100 ppm (<2% aromatics) 60 ppm (2-25% aromatics)
Chemical category	skin notation 2-25% aromatics, skin notation 2-25% aromatics
USA - ACGIH - Occupational Exposure Limits	
Local name	Stoddard solvent

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Stoddard solvent (8052-41-3)	
ACGIH OEL TWA [ppm]	100 ppm
Remark (ACGIH)	TLV® Basis: Eye, skin, & kidney dam; nausea; CNS impair
Regulatory reference	ACGIH 2023
Titanium dioxide (13463-67-7)	
Austria - Occupational Exposure Limits	
MAK (OEL TWA)	5 mg/m³ (alveolar dust, respirable fraction)
MAK (OEL STEL)	10 mg/m³ (alveolar dust, respirable fraction)
Belgium - Occupational Exposure Limits	
OEL TWA	10 mg/m³
Bulgaria - Occupational Exposure Limits	
OEL TWA	10 mg/m³ (respirable dust)
Croatia - Occupational Exposure Limits	
GVI (OEL TWA) [1]	10 mg/m³ (total dust, inhalable particles) 4 mg/m³ (respirable dust)
Denmark - Occupational Exposure Limits	
OEL TWA [1]	6 mg/m³
OEL STEL	12 mg/m³
Estonia - Occupational Exposure Limits	
OEL TWA	5 mg/m³
France - Occupational Exposure Limits	
VME (OEL TWA)	11 mg/m³
Chemical category	Carcinogen category 2
Germany - Occupational Exposure Limits (TRGS 900)	
AGW (OEL TWA) [1]	0.3 mg/m³
AGW (OEL C)	2.4 mg/m³
Greece - Occupational Exposure Limits	
OEL TWA	10 mg/m³ (inhalable fraction) 5 mg/m³ (respirable fraction)
Ireland - Occupational Exposure Limits	
OEL TWA [1]	10 mg/m³
OEL STEL	30 mg/m³ (calculated-respirable dust) 12 mg/m³ (calculated)
Latvia - Occupational Exposure Limits	
OEL TWA	10 mg/m³
Lithuania - Occupational Exposure Limits	
IPRV (OEL TWA)	5 mg/m³
Poland - Occupational Exposure Limits	
NDS (OEL TWA)	10 mg/m³
NDSP (OEL C)	30 mg/m³

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Titanium dioxide (13463-67-7)	
Portugal - Occupational Exposure Limits	
OEL TWA	10 mg/m³
Chemical category	A4 - Not Classifiable as a Human Carcinogen
Romania - Occupational Exposure Limits	
OEL TWA	10 mg/m³
OEL STEL	15 mg/m³
Slovakia - Occupational Exposure Limits	
NPHV (OEL TWA) [1]	5 mg/m³
Spain - Occupational Exposure Limits	
VLA-ED (OEL TWA) [1]	10 mg/m³
Sweden - Occupational Exposure Limits	
NGV (OEL TWA)	5 mg/m³
United Kingdom - Occupational Exposure Limits	
WEL TWA (OEL TWA) [1]	10 mg/m³ inhalable aerosol 4 mg/m³ respirable aerosol
WEL STEL (OEL STEL)	30 mg/m³ (calculated-total inhalable) 12 mg/m³ (calculated-respirable)
Norway - Occupational Exposure Limits	
Grønseverdi (OEL TWA) [1]	5 mg/m³
Korttidsverdi (OEL STEL)	10 mg/m³ (value calculated)
Switzerland - Occupational Exposure Limits	
MAK (OEL TWA) [1]	3 mg/m³ (respirable dust) 3 mg/m³ (total dust limit values) 10 mg/m³ (total dust limit values)
USA - ACGIH - Occupational Exposure Limits	
Local name	Titanium dioxide
ACGIH OEL TWA	10 mg/m³
Remark (ACGIH)	TLV® Basis: LRT irr; pneumoconiosis. Notations: A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans)
ACGIH chemical category	Confirmed Animal Carcinogen with Unknown Relevance to Humans
Regulatory reference	ACGIH 2024
Acetone (67-64-1)	
EU - Indicative Occupational Exposure Limit (IOEL)	
IOEL TWA	1210 mg/m³
IOEL TWA [ppm]	500 ppm
Austria - Occupational Exposure Limits	
MAK (OEL TWA)	1200 mg/m³
MAK (OEL TWA) [ppm]	500 ppm
MAK (OEL STEL)	4800 mg/m³
MAK (OEL STEL) [ppm]	2000 ppm

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Acetone (67-64-1)	
Belgium - Occupational Exposure Limits	
OEL TWA	594 mg/m ³
OEL TWA	246 ppm
OEL STEL	1187 mg/m ³
OEL STEL	492 ppm
Bulgaria - Occupational Exposure Limits	
OEL TWA	600 mg/m ³
OEL STEL	1400 mg/m ³
Bulgaria - Biological limit values	
BLV	80 mg/l Parameter: Acetone - Medium: urine - Sampling time: at the end of exposure or end of work shift
Croatia - Occupational Exposure Limits	
GVI (OEL TWA) [1]	1210 mg/m ³
GVI (OEL TWA) [2]	500 ppm
Croatia - Biological limit values	
BLV	20 mg/l Parameter: Acetone - Medium: blood - Sampling time: at the end of the work shift (interference of endogenous Acetone (<1.3 mg/L)) 20 mg/g Kreatinin Parameter: Acetone - Medium: urine - Sampling time: at the end of the work shift (calculated on the average Creatinine value of 1.2 g/L urine)
Cyprus - Occupational Exposure Limits	
OEL TWA	1210 mg/m ³
OEL TWA	500 ppm
Chemical category	Skin-potential for cutaneous absorption
Czech Republic - Occupational Exposure Limits	
PEL (OEL TWA)	800 mg/m ³
Denmark - Occupational Exposure Limits	
OEL TWA [1]	600 mg/m ³
OEL TWA [2]	250 ppm
OEL STEL	1200 mg/m ³
OEL STEL	500 ppm
Estonia - Occupational Exposure Limits	
OEL TWA	1210 mg/m ³
OEL TWA	500 ppm
Finland - Occupational Exposure Limits	
HTP (OEL TWA) [1]	1200 mg/m ³
HTP (OEL TWA) [2]	500 ppm
HTP (OEL STEL)	1500 mg/m ³
HTP (OEL STEL) [ppm]	630 ppm
France - Occupational Exposure Limits	
VME (OEL TWA)	1210 mg/m ³ (restrictive limit)

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Acetone (67-64-1)	
VME (OEL TWA) [ppm]	500 ppm (restrictive limit)
VLE (OEL C/STEL)	2420 mg/m ³ (restrictive limit)
VLE (OEL C/STEL) [ppm]	1000 ppm (restrictive limit)
France - Biological limit values	
BLV	Parameter: Acetone - Medium: urine - Sampling time: end of shift (per the Authority, the values for this substance must be decided and/or determined on a case by case basis. Guidance for the calculation of and interpretation of values is provided in the source)
Germany - Occupational Exposure Limits (TRGS 900)	
AGW (OEL TWA) [1]	1200 mg/m ³ (the risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
AGW (OEL TWA) [2]	500 ppm (the risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Germany - Biological limit values (TRGS 903)	
BLV	50 mg/l Parameter: Acetone - Medium: urine - Sampling time: end of shift
Gibraltar - Occupational Exposure Limits	
OEL TWA	1210 mg/m ³
OEL TWA	500 ppm
Greece - Occupational Exposure Limits	
OEL TWA	1780 mg/m ³
OEL STEL	3560 mg/m ³
Hungary - Occupational Exposure Limits	
AK (OEL TWA)	1210 mg/m ³
Ireland - Occupational Exposure Limits	
OEL TWA [1]	1210 mg/m ³
OEL TWA [2]	500 ppm
OEL STEL	3630 mg/m ³ (calculated)
OEL STEL	1500 ppm (calculated)
Italy - Occupational Exposure Limits	
OEL TWA	1210 mg/m ³
OEL TWA	500 ppm
Latvia - Occupational Exposure Limits	
OEL TWA	1210 mg/m ³
OEL TWA	500 ppm
Lithuania - Occupational Exposure Limits	
IPRV (OEL TWA)	1210 mg/m ³
IPRV (OEL TWA) [ppm]	500 ppm
TPRV (OEL STEL)	2420 mg/m ³
TPRV (OEL STEL) [ppm]	1000 ppm
Luxembourg - Occupational Exposure Limits	
OEL TWA	1210 mg/m ³

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Acetone (67-64-1)	
OEL TWA	500 ppm
Malta - Occupational Exposure Limits	
OEL TWA	1210 mg/m ³
OEL TWA	500 ppm
Netherlands - Occupational Exposure Limits	
TGG-8u (OEL TWA)	1210 mg/m ³
TGG-8u (OEL TWA) [ppm]	500 ppm
TGG-15min (OEL STEL)	2420 mg/m ³
TGG-15min (OEL STEL) [ppm]	1 ppm
Poland - Occupational Exposure Limits	
NDS (OEL TWA)	600 mg/m ³
NDSCh (OEL STEL)	1800 mg/m ³
Portugal - Occupational Exposure Limits	
OEL TWA	1210 mg/m ³ (indicative limit value)
OEL TWA	500 ppm (indicative limit value)
OEL STEL	750 ppm
Chemical category	A4 - Not Classifiable as a Human Carcinogen
Romania - Occupational Exposure Limits	
OEL TWA	1210 mg/m ³
OEL TWA	500 ppm
Romania - Biological limit values	
BLV	50 mg/l Parameter: Acetone - Medium: urine - Sampling time: end of shift
Slovakia - Occupational Exposure Limits	
NPHV (OEL TWA) [1]	1210 mg/m ³
NPHV (OEL TWA) [2]	500 ppm
Slovakia - Biological limit values	
BLV	80 mg/l Parameter: Acetone - Medium: urine - Sampling time: end of exposure or work shift
Slovenia - Occupational Exposure Limits	
OEL TWA	1210 mg/m ³
OEL TWA	500 ppm
OEL STEL	2420 mg/m ³
OEL STEL	1000 ppm
Spain - Occupational Exposure Limits	
VLA-ED (OEL TWA) [1]	1210 mg/m ³ (indicative limit value)
VLA-ED (OEL TWA) [2]	500 ppm (indicative limit value)
Spain - Biological limit values	
BLV	50 mg/l Parameter: Acetone - Medium: urine - Sampling time: end of shift

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Acetone (67-64-1)	
Sweden - Occupational Exposure Limits	
NGV (OEL TWA)	600 mg/m ³
NGV (OEL TWA) [ppm]	250 ppm
KGV (OEL STEL)	1200 mg/m ³
KGV (OEL STEL) [ppm]	500 ppm
United Kingdom - Occupational Exposure Limits	
WEL TWA (OEL TWA) [1]	1210 mg/m ³
WEL TWA (OEL TWA) [2]	500 ppm
WEL STEL (OEL STEL)	3620 mg/m ³
WEL STEL (OEL STEL) [ppm]	1500 ppm
Norway - Occupational Exposure Limits	
Grenseverdi (OEL TWA) [1]	295 mg/m ³
Grenseverdi (OEL TWA) [2]	125 ppm
Korttidsverdi (OEL STEL)	368.75 mg/m ³ (value calculated)
Korttidsverdi (OEL STEL) [ppm]	156.25 ppm (value calculated)
Switzerland - Occupational Exposure Limits	
MAK (OEL TWA) [1]	1200 mg/m ³
MAK (OEL TWA) [2]	500 ppm
KZGW (OEL STEL)	2400 mg/m ³
KZGW (OEL STEL) [ppm]	1000 ppm
Switzerland - Biological limit values	
BAT (BLV)	50 mg/l Parameter: Acetone - Medium: urine - Sampling time: end of shift Parameter: Acetone - Medium: urine - Sampling time: end of shift
Turkey - Occupational Exposure Limits	
OEL TWA	1210 mg/m ³
OEL TWA	500 ppm
USA - ACGIH - Occupational Exposure Limits	
Local name	Acetone
ACGIH OEL TWA [ppm]	250 ppm
ACGIH OEL STEL [ppm]	500 ppm
Remark (ACGIH)	TLV® Basis: URT & eye irr; CNS impair. Notations: A4 (Not classifiable as a Human Carcinogen); BEI
ACGIH chemical category	Not Classifiable as a Human Carcinogen
Regulatory reference	ACGIH 2023
USA - ACGIH - Biological Exposure Indices	
Local name	ACETONE
BEI (BLV)	25 mg/l Parameter: Acetone - Medium: urine - Sampling time: end of shift (nonspecific)
Regulatory reference	ACGIH 2023

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Xylene (1330-20-7)

EU - Indicative Occupational Exposure Limit (IOEL)

IOEL TWA	221 mg/m ³
IOEL TWA [ppm]	50 ppm
IOEL STEL	442 mg/m ³
IOEL STEL [ppm]	100 ppm

Austria - Occupational Exposure Limits

MAK (OEL TWA)	221 mg/m ³
MAK (OEL TWA) [ppm]	50 ppm
MAK (OEL STEL)	442
MAK (OEL STEL) [ppm]	100 ppm

Belgium - Occupational Exposure Limits

OEL TWA	221
OEL TWA	50 ppm
OEL STEL	442 mg/m ³
OEL STEL	100 ppm

Denmark - Occupational Exposure Limits

OEL TWA [1]	109 mg/m ³
OEL TWA [2]	25 ppm
OEL STEL	218 mg/m ³
OEL STEL	50 ppm

Finland - Occupational Exposure Limits

HTP (OEL TWA) [1]	220 mg/m ³
HTP (OEL TWA) [2]	50 ppm
HTP (OEL STEL)	440 mg/m ³
HTP (OEL STEL) [ppm]	100 ppm

France - Occupational Exposure Limits

VME (OEL TWA)	221 mg/m ³ [VME] (restrictive limit)
VME (OEL TWA) [ppm]	50 ppm [VME] (restrictive limit)
VLE (OEL C/STEL)	442 mg/m ³ [VLCT] (restrictive limit)
VLE (OEL C/STEL) [ppm]	100 ppm [VLCT] (restrictive limit)
Chemical category	Risk of cutaneous absorption

Germany - Occupational Exposure Limits (TRGS 900)

AGW (OEL TWA) [1]	440 mg/m ³
AGW (OEL TWA) [2]	100 ppm
AGW (OEL C)	880 mg/m ³
AGW (OEL C) [ppm]	200 ppm

Hungary - Occupational Exposure Limits

AK (OEL TWA)	221 mg/m ³
CK (OEL STEL)	442 mg/m ³

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Xylene (1330-20-7)

Ireland - Occupational Exposure Limits

OEL TWA [1]	221 mg/m ³
OEL TWA [2]	50 ppm
OEL STEL	442 mg/m ³
OEL STEL	100 ppm

Italy - Occupational Exposure Limits

OEL TWA	50 ppm TWA (pure)
OEL STEL	100 ppm STEL (pure)
Chemical category	skin - potential for cutaneous absorption

Latvia - Occupational Exposure Limits

OEL TWA	221 mg/m ³
OEL TWA	50 ppm
OEL STEL	442 mg/m ³
OEL STEL	100 ppm

Poland - Occupational Exposure Limits

NDS (OEL TWA)	100 mg/m ³
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Romania - Occupational Exposure Limits

OEL TWA	221 mg/m ³
OEL TWA	50 ppm
OEL STEL	422 mg/m ³
OEL STEL	100 ppm

Spain - Occupational Exposure Limits

VLA-ED (OEL TWA) [1]	221 mg/m ³
VLA-ED (OEL TWA) [2]	50 ppm
VLA-EC (OEL STEL)	442 mg/m ³
VLA-EC (OEL STEL) [ppm]	100 ppm

Sweden - Occupational Exposure Limits

NGV (OEL TWA)	221 mg/m ³
NGV (OEL TWA) [ppm]	50 ppm
KGV (OEL STEL)	442 mg/m ³
KGV (OEL STEL) [ppm]	100 ppm

United Kingdom - Occupational Exposure Limits

WEL TWA (OEL TWA) [1]	221 mg/m ³
WEL TWA (OEL TWA) [2]	50 ppm
WEL STEL (OEL STEL)	442 mg/m ³
WEL STEL (OEL STEL) [ppm]	100 ppm

Switzerland - Occupational Exposure Limits

MAK (OEL TWA) [1]	435 mg/m ³
MAK (OEL TWA) [2]	100 ppm

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Xylene (1330-20-7)	
KZGW (OEL STEL)	870 mg/m³
KZGW (OEL STEL) [ppm]	200 ppm
USA - ACGIH - Occupational Exposure Limits	
Local name	Xylene, mixed isomers (Dimethylbenzene)
ACGIH OEL TWA	221 mg/m³
ACGIH OEL TWA [ppm]	50 ppm
ACGIH OEL STEL	442 mg/m³
ACGIH OEL STEL [ppm]	100 ppm
Remark (ACGIH)	TLV® Basis: URT & eye irr; hematologic eff; ototoxicity (for mixtures containing p-xylene); CNS impair. Notations: OTO (for mixtures containing p-xylene); A4 (Not classifiable as a Human Carcinogen); BEI
Regulatory reference	ACGIH 2023
USA - ACGIH - Biological Exposure Indices	
Local name	XYLENES (Technical or commercial grade)
BEI (BLV)	1.5 g/g Kreatinin Parameter: Methylhippuric acids - Medium: urine - Sampling time: End of shift
Regulatory reference	ACGIH 2023

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof equipment with flammable materials. Ensure adequate ventilation, especially in confined areas.

8.2.2. Personal protection equipment

Personal protective equipment:

Gloves. Protective goggles. Protective clothing. Insufficient ventilation: wear respiratory protection.

Personal protective equipment symbol(s):



PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

8.2.2.1. Eye and face protection

Eye protection:

Wear eye protection, including chemical splash goggles and a face shield when possibility exists for eye contact due to spraying liquid or airborne particles [EN 166]

8.2.2.2. Skin protection

Skin and body protection:

Wear long sleeves, and chemically impervious PPE/coveralls to minimize bodily exposure. [EN 14605:2005 and EN 13034:2005]

Hand protection:

Use gloves chemically resistant to this material when prolonged or repeated contact could occur. Gloves should be classified under Standard EN 374 or ASTM F1296. Suggested glove materials are: Neoprene, Nitrile/butadiene rubber, Polyethylene, Ethyl vinyl alcohol laminate, PVC or vinyl. Suitable gloves for this specific application can be recommended by the glove supplier.

8.2.2.3. Respiratory protection

Respiratory protection:

Wear a NIOSH-approved (or equivalent) full-facepiece airline respirator in the positive pressure mode with emergency escape provisions. In case of inadequate ventilation or risk of inhalation of vapours, use suitable respiratory equipment with gas filter (type A2). Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection. [EN 137]

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

No additional information available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: Blue.
Odour	: Characteristic. Solvent.
Odour threshold	: Not available
Melting point	: Not available
Freezing point	: Not available
Boiling point	: Not available
Flammability	: Not available
Explosion limits	: Not available
Lower explosive limit (LEL)	: Not available
Upper explosive limit (UEL)	: Not available
Flash point	: -20 °C (-4 °F) (Acetone value)
Auto-ignition temperature	: Not available
Decomposition temperature	: Not available
pH	: Not available
Viscosity, kinematic	: Not available
Solubility	: Not available
Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapour pressure	: Not available
Vapour pressure at 50°C	: Not available
Density	: Not available
Relative density	: Not available
Relative vapour density at 20°C	: Not available
Particle size	: Not applicable
Particle size distribution	: Not applicable
Particle shape	: Not applicable
Particle aspect ratio	: Not applicable
Particle aggregation state	: Not applicable
Particle agglomeration state	: Not applicable
Particle specific surface area	: Not applicable

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Particle dustiness : Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known under normal conditions of use.

10.2. Chemical stability

Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of hazardous reactions

None known.

10.4. Conditions to avoid

Ignition sources. Heat. Sparks. Open flame. Static electricity.

10.5. Incompatible materials

Strong acids. Strong bases. Strong oxidizing agents. selected amines with alkali metals and halogens.

10.6. Hazardous decomposition products

Carbon oxides (CO, CO₂).

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

Toluene (108-88-3)	
LD50 oral rat	5000 mg/kg
LD50 dermal rabbit	5000 mg/kg
LC50 Inhalation - Rat	384 mg/m ³
LC50 Inhalation - Rat (Vapours)	> 20 mg/l Source: ECHA
Ethylbenzene (100-41-4)	
LD50 oral rat	3500 mg/kg
LD50 dermal rabbit	15400 mg/kg
LC50 Inhalation - Rat	17.2 mg/l/4h
LC50 Inhalation - Rat [ppm]	4000 ppm Source: ECHA, Harmonized classification of EU CLP
Cumene (98-82-8)	
LD50 oral rat	2910 mg/kg Source: HSDB
LD50 oral	2700 mg/kg body weight

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Cumene (98-82-8)

LD50 dermal rabbit	12300 µl/kg
LC50 Inhalation - Rat [ppm]	> 3577 ppm 6 h

Methyl ethyl ketone (78-93-3)

LD50 oral rat	2483 mg/kg (Source: JAPAN_GHS)
LD50 oral	4000 mg/kg body weight
LD50 dermal rabbit	5000 mg/kg (Source: JAPAN_GHS)
LC50 Inhalation - Rat [ppm]	11700 ppm/4h
LC50 Inhalation - Rat (Vapours)	32 mg/l Source: RTECS

Acetone (67-64-1)

LD50 oral rat	5800 mg/kg (Source: NLM_CIP)
LD50 dermal rat	> 15700 mg/kg
LD50 dermal rabbit	> 15700 mg/kg (Source: OECD_SIDS)
LC50 Inhalation - Rat	50100 mg/m³ (Exposure time: 8 h Source: OECD_SIDS)
LC50 Inhalation - Rat (Vapours)	76 mg/l Source: ECHA

Xylene (1330-20-7)

LD50 oral rat	3523 mg/kg
LD50 dermal rabbit	12126 mg/kg body weight Animal: rabbit, Animal sex: male, Remarks on results: other:
LC50 Inhalation - Rat	27124 mg/m³ (air)
LC50 Inhalation - Rat [ppm]	5922 ppm

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Suspected of causing cancer.

Ethylbenzene (100-41-4)

IARC group	2B - Possibly carcinogenic to humans
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Cumene (98-82-8)

IARC group	2B - Possibly carcinogenic to humans
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Reproductive toxicity	: Suspected of damaging fertility or the unborn child.
STOT-single exposure	: May cause drowsiness or dizziness.
STOT-repeated exposure	: May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	: May be fatal if swallowed and enters airways.

11.2. Information on other hazards

The mixture contains Methyl ethyl ketone (CAS#78-93-3), which is identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605, at a concentration equal to or greater than 0,1 %

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: No information available.
Hazardous to the aquatic environment, short-term (acute)	: Not classified

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Hazardous to the aquatic environment, long-term (chronic) : Not classified

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Endocrine disrupting properties

The mixture contains Methyl ethyl ketone (CAS#78-93-3), which is identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605, at a concentration equal to or greater than 0,1 %

12.7. Other adverse effects

Other adverse effects : No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Obtain the consent of pollution control authorities before discharging to wastewater treatment plants.

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Do not allow the product to be released into the environment.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

14.1. UN number or ID number

UN-No. (ADR) : UN 1139

UN-No. (IMDG) : UN 1139

UN-No. (IATA) : UN 1139

UN-No. (ADN) : UN 1139

UN-No. (RID) : UN 1139

14.2. UN proper shipping name

Proper Shipping Name (ADR) : COATING SOLUTION

Proper Shipping Name (IMDG) : COATING SOLUTION

Proper Shipping Name (IATA) : Coating solution

Proper Shipping Name (ADN) : COATING SOLUTION

Proper Shipping Name (RID) : COATING SOLUTION

Transport document description (ADR) : UN 1139 COATING SOLUTION, 3, II, (D/E)

Transport document description (IMDG) : UN 1139 COATING SOLUTION, 3, II

Transport document description (IATA) : UN 1139 Coating solution, 3, II

Transport document description (ADN) : UN 1139 COATING SOLUTION, 3, II

Transport document description (RID) : UN 1139 COATING SOLUTION, 3, II

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

14.3. Transport hazard class(es)

ADR	
Transport hazard class(es) (ADR)	: 3
Hazard labels (ADR)	: 3
:	
IMDG	
Transport hazard class(es) (IMDG)	: 3
Hazard labels (IMDG)	: 3
:	
IATA	
Transport hazard class(es) (IATA)	: 3
Hazard labels (IATA)	: 3
:	
ADN	
Transport hazard class(es) (ADN)	: 3
Hazard labels (ADN)	: 3
:	
RID	
Transport hazard class(es) (RID)	: 3
Hazard labels (RID)	: 3
:	

14.4. Packing group

Packing group (ADR)	: II
Packing group (IMDG)	: II
Packing group (IATA)	: II
Packing group (ADN)	: II
Packing group (RID)	: II

14.5. Environmental hazards

Dangerous for the environment	: No
Marine pollutant	: No

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

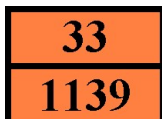
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Other information : No supplementary information available

14.6. Special precautions for user

Overland transport

Classification code (ADR) : F1
Special provision (ADR) : 640D
Limited quantities (ADR) : 5I
Excepted quantities (ADR) : E2
Packing instructions (ADR) : P001, IBC02, R001
Mixed packing provisions (ADR) : MP19
Portable tank and bulk container instructions (ADR) : T4
Portable tank and bulk container special provisions (ADR) : TP1, TP8
Tank code (ADR) : LGBF
Vehicle for tank carriage : FL
Transport category (ADR) : 2
Special provisions for carriage - Operation (ADR) : S2, S20
Hazard identification number (Kemler No.) : 33
Orange plates :



Tunnel restriction code (ADR) : D/E
EAC : •3YE

Transport by sea (IMDG)

Limited quantities (IMDG) : 5 L
Excepted quantities (IMDG) : E2
Packing instructions (IMDG) : P001
IBC packing instructions (IMDG) : IBC02
Tank instructions (IMDG) : T4
Tank special provisions (IMDG) : TP1, TP8
EmS-No. (Fire) : F-E
EmS-No. (Spillage) : S-E
Stowage category (IMDG) : B

Air transport (IATA)

PCA Excepted quantities (IATA) : E2
PCA Limited quantities (IATA) : Y341
PCA limited quantity max net quantity (IATA) : 1L
PCA packing instructions (IATA) : 353
PCA max net quantity (IATA) : 5L
CAO packing instructions (IATA) : 364
CAO max net quantity (IATA) : 60L
Special provision (IATA) : A3
ERG code (IATA) : 3L

Inland waterway transport

Classification code (ADN) : F1
Special provision (ADN) : 640D
Limited quantities (ADN) : 5 L
Excepted quantities (ADN) : E2
Equipment required (ADN) : PP, EX, A
Ventilation (ADN) : VE01
Number of blue cones/lights (ADN) : 1

Rail transport

Classification code (RID) : F1
Special provision (RID) : 640D
Limited quantities (RID) : 5L
Excepted quantities (RID) : E2

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Packing instructions (RID)	: P001, IBC02, R001
Mixed packing provisions (RID)	: MP19
Portable tank and bulk container instructions (RID)	: T4
Portable tank and bulk container special provisions (RID)	: TP1, TP8
Tank codes for RID tanks (RID)	: LGBF
Transport category (RID)	: 2
Colis express (express parcels) (RID)	: CE7
Hazard identification number (RID)	: 33

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains no REACH candidate substance

Contains no REACH Annex XIV substances.

Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

Contains no substance(s) subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

VOC content : 44 – 45 72-76 % Volatile

15.1.2. National regulations

All chemical substances in this product are listed in the EPA (Environment Protection Agency) TSCA (Toxic Substances Control Act) Inventory or are exempt.

Germany

Water hazard class (WGK) : WGK 3, Highly hazardous to water (Classification according to AwSV, Annex 1)

Hazardous Incident Ordinance (12. BImSchV) : Is not subject to the Hazardous Incident Ordinance (12. BImSchV)

Netherlands

SZW-lijst van kankerverwekkende stoffen : Benzene, Cumene, Vinyl chloride, Stoddard solvent are listed

SZW-lijst van mutagene stoffen : Benzene, Stoddard solvent are listed

SZW-lijst van reprotoxische stoffen – Borstvoeding : None of the components are listed

SZW-lijst van reprotoxische stoffen – Vruchtbaarheid : None of the components are listed

SZW-lijst van reprotoxische stoffen – Ontwikkeling : Toluene, Methyl alcohol, Xylene are listed

Denmark

Class for fire hazard : Class I-1

Store unit : 1 Liter

Classification remarks : F <Flam. Liq. 2>; Emergency management guidelines for the storage of flammable liquids must be followed

Danish National Regulations : Young people below the age of 18 years are not allowed to use the product
Pregnant/breastfeeding women working with the product must not be in direct contact with the product
The requirements from the Danish Working Environment Authorities regarding work with carcinogens must be followed during use and disposal

Switzerland

Storage class (LK) : LK 3 - Flammable liquids

15.2. Chemical safety assessment

No additional information available

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

SECTION 16: Other information

Full text of H- and EUH-phrases

Asp. Tox. 1	Aspiration hazard Category 1
Carc. 2	Carcinogenicity Category 2
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids Category 2
Flam. Liq. 3	Flammable liquids Category 3
Repr. 2	Reproductive toxicity Category 2
Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT RE 2	Specific target organ toxicity – Repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Narcosis
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H332	Harmful if inhaled.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H361	Suspected of damaging fertility or the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.

Abbreviations and acronyms

ACGIH	American Conference of Government Industrial Hygienists
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS-No.	Chemical Abstract Service number
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DNEL	Derived-No Effect Level
EC50	Median effective concentration
EC-No.	European Community number
ED	Endocrine disrupting properties
EN	European Standard
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LD50	Median lethal dose
OEL	Occupational Exposure Limit
OSHA	Occupational Safety and Health Administration

PDC® F-830 MURACULON C4 BLUE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Abbreviations and acronyms	
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STOT	Specific target organ toxicity
TRGS	Technical Rules for Hazardous Substances
vPvB	Very Persistent and Very Bioaccumulative
WGK	Water Hazard Class

Data sources : Globally Harmonized System of Classification and Labelling of Chemicals (GHS).
Classification for the USA in accordance with 29 CFR 1910.1200 (2012).
Classification for the EU in accordance with Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.
ECHA (European Chemicals Agency).

Training advice : Normal use of this product shall imply use in accordance with the instructions for use and corresponding product packaging.

Indication of changes:

Revision 1.0: New SDS Created.
Revision 3.0: Updated Composition

Other information : Author: WJS

SDS prepared for Plasti Dip International, Inc. by:
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Product Regulatory Services Group
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United States
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Classification according to Regulation (EC) No. 1272/2008	Classification procedure
Flammable liquids, Category 2	Test Data
Skin corrosion/irritation, Category 2	Specific concentration limit
Serious eye damage/eye irritation, Category 2	Specific concentration limit
Carcinogenicity, Category 2	Specific concentration limit
Reproductive toxicity, Category 2	Specific concentration limit
Specific target organ toxicity – Single exposure, Category 3, Narcosis	Specific concentration limit
Specific target organ toxicity – Repeated exposure, Category 2	Specific concentration limit

Safety Data Sheet (SDS), EU

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.