TOWER PRODUCTS EUROPE
Excellence in Pressroom Chemistry

SAFETY DATA SHEET
TOWER SMARTFLEX UV FLEXO CLEANER

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

1.1. Product identifier

Product name TOWER SMARTFLEX UV FLEXO CLEANER

Product number 59341

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

Identified uses Cleaning agent.

1.3. Details of the supplier of the safety data sheet

Supplier

Tower Products Europe BV
Rendementsweg 20B-1
3641 SL Mijdrecht
The Netherlands
+31 297 289 691
+31 297 289 655
sales@towerproducts.eu

1.4. Emergency telephone number

Emergency telephone SGS - +32 (0)3 575 55 55 (24h)

Sds No. 59341

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Not Classified

Health hazards Repr. 2 - H361

Environmental hazards Not Classified

2.2. Label elements

Hazard pictograms

Signal word Warning

Hazard statements H361 Suspected of damaging fertility or the unborn child.

Precautionary statements

P202 Do not handle until all safety precautions have been read and understood.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P308+P313 IF exposed or concerned: Get medical advice/ attention.
P405 Store locked up.
P501 Dispose of contents/ container in accordance with national regulations.

TOWER SMARTFLEX UV FLEXO CLEANER

Contains 4-HYDROXY-4-METHYLPENTAN-2-ONE

2.3. Other hazards

Pregnant or breastfeeding women should not work with this product if there is any risk of exposure. This product does not contain any substances classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

DIPROPYLENEGLYCOL METHYLETHER **60 - < 100%**

CAS number: 34590-94-8 EC number: 252-104-2 REACH registration number: 01-2119450011-60-XXXX

Classification
Not Classified

4-HYDROXY-4-METHYLPENTAN-2-ONE **5-10%**

CAS number: 123-42-2 EC number: 204-626-7 REACH registration number: 01-2119473975-21-XXXX

Classification
Eye Irrit. 2 - H319
Repr. 2 - H361
STOT SE 3 - H335

The full text for all hazard statements is displayed in Section 16.

Composition comments The data shown are in accordance with the latest EC Directives.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Rinse nose and mouth with water. Get medical attention if any discomfort continues.

Ingestion Do not induce vomiting. Rinse mouth thoroughly with water. Give plenty of water to drink. Get medical attention if any discomfort continues.

Skin contact Remove affected person from source of contamination. Remove contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention promptly if symptoms occur after washing.

Eye contact Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention promptly if symptoms occur after washing.

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

General information Suspected of damaging fertility or the unborn child.

Eye contact May cause temporary eye irritation.

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

Notes for the doctor Treat symptomatically.

SECTION 5: Firefighting measures

TOWER SMARTFLEX UV FLEXO CLEANER

5.1. Extinguishing media

Suitable extinguishing media Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards Pregnant or breastfeeding women should not work with this product if there is any risk of exposure.

Hazardous combustion products Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

5.3. Advice for firefighters

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Pregnant or breastfeeding women should not work with this product if there is any risk of exposure. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Avoid inhalation of vapours and contact with skin and eyes. Provide adequate ventilation. No smoking, sparks, flames or other sources of ignition near spillage.

6.2. Environmental precautions

Environmental precautions Do not discharge into drains or watercourses or onto the ground. Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Absorb spillage with non-combustible, absorbent material. Collect and place in suitable waste disposal containers and seal securely. Provide adequate ventilation. Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Pregnant or breastfeeding women should not work with this product if there is any risk of exposure. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Provide adequate ventilation. Avoid inhalation of vapours and contact with skin and eyes.

Advice on general occupational hygiene Do not eat, drink or smoke when using this product. Wash after use and before eating, smoking and using the toilet. Remove contaminated clothing and protective equipment before entering eating areas. Take off immediately all contaminated clothing and wash it before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly-closed, original container in a dry, cool and well-ventilated place.

7.3. Specific end use(s)

TOWER SMARTFLEX UV FLEXO CLEANER

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Occupational exposure limits

DIPROPYLENEGLYCOL METHYLETHER

Long-term exposure limit (8-hour TWA): WEL 50 ppm 308 mg/m³
Sk

4-HYDROXY-4-METHYLPENTAN-2-ONE

Long-term exposure limit (8-hour TWA): WEL 50 ppm 241 mg/m³
Short-term exposure limit (15-minute): WEL 75 ppm 362 mg/m³
WEL = Workplace Exposure Limit
Sk = Can be absorbed through the skin.

DIPROPYLENEGLYCOL METHYLETHER (CAS: 34590-94-8)

Ingredient comments WEL = Workplace Exposure Limits

DNEL
Workers - Dermal; Long term systemic effects: 283 mg/kg/day
Workers - Inhalation; Long term systemic effects: 308 mg/kg
Consumer - Dermal; Long term systemic effects: 121 mg/kg/day
Consumer - Inhalation; Long term systemic effects: 37.2 mg/m³
Consumer - Oral; Long term systemic effects: 36 mg/kg/day

PNEC
- Fresh water; 19 mg/l
- marine water; 1.9 mg/l
- Intermittent release; 190 mg/l
- STP; 4168 mg/l
- Sediment (Freshwater); 70.2 mg/kg/day
- Sediment (Marinewater); 7.02 mg/kg/day
- Soil; 2.74 mg/kg/day

4-HYDROXY-4-METHYLPENTAN-2-ONE (CAS: 123-42-2)

DNEL
Industry - Inhalation; Short term local effects: 240 mg/m³
Industry - Inhalation; Long term systemic effects: 32.6 mg/m³
Industry - Dermal; Long term systemic effects: 467 mg/kg/day
Consumer - Inhalation; Long term systemic effects: 5.8 mg/m³
Consumer - Oral; Long term systemic effects: 1.67 mg/kg/day
Consumer - Dermal; Long term systemic effects: 167 mg/kg/day

PNEC
- Fresh water; 2 mg/l
- marine water; 0.2 mg/l
- STP; 10 mg/l
- Sediment (Freshwater); 7.4 mg/kg/day
- Sediment (Marinewater); 0.74 mg/kg/day
- Soil; 0.31 mg/kg/day

8.2. Exposure controls

Protective equipment

TOWER SMARTFLEX UV FLEXO CLEANER

Appropriate engineering controls	Pregnant or breastfeeding women should not work with this product if there is any risk of exposure. Provide adequate ventilation. Observe any occupational exposure limits for the product or ingredients.
Eye/face protection	Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses. Personal protective equipment for eye and face protection should comply with European Standard EN166.
Hand protection	The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. It is recommended that gloves are made of the following material: Butyl rubber. To protect hands from chemicals, gloves should comply with European Standard EN374.
Other skin and body protection	Wear suitable protective clothing as protection against splashing or contamination.
Hygiene measures	Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke. Take off immediately all contaminated clothing and wash it before reuse. Remove contaminated clothing and protective equipment before entering eating areas.
Respiratory protection	Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Respiratory protection must be used if the airborne contamination exceeds the recommended occupational exposure limit. Gas filter, type A2. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Clear liquid.
Colour	Colourless.
Odour	Characteristic.
Odour threshold	No information available.
pH	No information available.
Melting point	No information available.
Initial boiling point and range	> 166°C
Flash point	72°C
Evaporation rate	No information available.
Evaporation factor	No information available.
Flammability (solid, gas)	No information available.
Upper/lower flammability or explosive limits	No information available.
Other flammability	No information available.
Vapour pressure	0.43 hPa @ 20°C
Vapour density	No information available.

TOWER SMARTFLEX UV FLEXO CLEANER

Relative density	0.955 @ 20°C
Bulk density	No information available.
Solubility(ies)	Miscible with water.
Partition coefficient	No information available.
Auto-ignition temperature	No information available.
Decomposition Temperature	No information available.
Viscosity	> 5 mPa s @ 20°C
Explosive properties	No information available.
Explosive under the influence of a flame	No information available.
Oxidising properties	No information available.

9.2. Other information

Volatile organic compound	This product contains a maximum VOC content of 955 kg/m³.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	The following materials may react with the product: Strong acids. Strong alkalis. Strong oxidising agents.

10.2. Chemical stability

Stability	Stable at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Not determined.

10.4. Conditions to avoid

Conditions to avoid	Keep away from heat, sparks and open flame.

10.5. Incompatible materials

Materials to avoid	Strong acids. Strong alkalis. Strong oxidising agents.

10.6. Hazardous decomposition products

Hazardous decomposition products	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological effects	No information available.

Skin corrosion/irritation

Skin corrosion/irritation	No information available.

Serious eye damage/irritation

Serious eye damage/irritation	No information available.

Respiratory sensitisation

Respiratory sensitisation	No information available.

TOWER SMARTFLEX UV FLEXO CLEANER

Skin sensitisation

Skin sensitisation No information available.

Germ cell mutagenicity

Genotoxicity - in vitro No information available.

Carcinogenicity

Carcinogenicity No information available.

Reproductive toxicity

Reproductive toxicity - fertility Suspected of damaging fertility or the unborn child.

Specific target organ toxicity - single exposure

STOT - single exposure No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure No information available.

Aspiration hazard

Aspiration hazard No information available.

Inhalation Gas or vapour in high concentrations may irritate the respiratory system.

Ingestion May cause discomfort if swallowed.

Skin contact Skin irritation should not occur when used as recommended.

Eye contact May cause temporary eye irritation.

Toxicological information on ingredients.

DIPROPYLENEGLYCOL METHYLETHER

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg)	8,740.0
Species	Rat
ATE oral (mg/kg)	8,740.0

Acute toxicity - dermal

Acute toxicity dermal (LD_{50} mg/kg)	9,510.0
Species	Rabbit

Acute toxicity - inhalation

Acute toxicity inhalation (LC_{50} vapours mg/l)	3,404.47
Species	Rat
ATE inhalation (vapours mg/l)	3,404.47

Skin corrosion/irritation

Animal data	Not irritating. Rabbit OECD 404

Serious eye damage/irritation

TOWER SMARTFLEX UV FLEXO CLEANER

Serious eye damage/irritation	May cause temporary eye irritation.
Respiratory sensitisation	
Respiratory sensitisation	No information available.
Skin sensitisation	
Skin sensitisation	- Human: Not sensitising.
Germ cell mutagenicity	
Genotoxicity - in vitro	Chromosome aberration: Negative.
Carcinogenicity	
Carcinogenicity	No evidence of carcinogenicity in animal studies. This information is based on test data from similar products
Reproductive toxicity	
Reproductive toxicity - fertility	No evidence of reproductive toxicity in animal studies. Two-generation study - , Inhalation, Rat
Reproductive toxicity - development	No evidence of reproductive toxicity in animal studies. Developmental toxicity: - : , Inhalation, Rat Negative.
Specific target organ toxicity - single exposure	
STOT - single exposure	Not classified as a specific target organ toxicant after a single exposure.
Specific target organ toxicity - repeated exposure	
STOT - repeated exposure	Prolonged or repeated exposure may cause the following adverse effects: Dizziness. Drowsiness. Narcotic effect.
Aspiration hazard	
Aspiration hazard	Based on available data the classification criteria are not met.

Inhalation	Gas or vapour in high concentrations may irritate the respiratory system.
Ingestion	May cause discomfort if swallowed.
Skin contact	Prolonged skin contact may cause temporary irritation.
Eye contact	May cause temporary eye irritation.

4-HYDROXY-4-METHYLPENTAN-2-ONE

Skin corrosion/irritation	
Animal data	Not irritating. OECD 404
Serious eye damage/irritation	
Serious eye damage/irritation	Causes serious eye irritation. OECD 405
Respiratory sensitisation	
Respiratory sensitisation	No information available.
Skin sensitisation	
Skin sensitisation	- Guinea pig: Not sensitising. OECD 406

TOWER SMARTFLEX UV FLEXO CLEANER

Germ cell mutagenicity

Genotoxicity - in vitro Ames test: Negative. OECD 471 Gene mutation: Negative. OECD 476 Chromosome aberration: Negative. OECD 473

Genotoxicity - in vivo Based on available data the classification criteria are not met.

Carcinogenicity

Carcinogenicity Based on available data the classification criteria are not met. Read-across data.

Reproductive toxicity

Reproductive toxicity - fertility Fertility - NOAEL 300 mg/kg/day, Oral, Rat P

Specific target organ toxicity - single exposure

STOT - single exposure May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure No information available.

Aspiration hazard

Aspiration hazard No information available.

Inhalation May cause respiratory system irritation.

Ingestion Liquid irritates mucous membranes and may cause abdominal pain if swallowed.

Skin contact Skin irritation should not occur when used as recommended.

Eye contact Causes serious eye irritation.

Acute and chronic health hazards Suspected of damaging fertility or the unborn child.

SECTION 12: Ecological information

Ecotoxicity The product is not expected to be hazardous to the environment. However, large or frequent spills may have hazardous effects on the environment.

Ecological information on ingredients.

DIPROPYLENEGLYCOL METHYLETHER

Ecotoxicity The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

4-HYDROXY-4-METHYLPENTAN-2-ONE

Ecotoxicity The product components are not classified as environmentally hazardous. However, large or frequent spills may have hazardous effects on the environment.

12.1. Toxicity

Toxicity No information available.

Ecological information on ingredients.

DIPROPYLENEGLYCOL METHYLETHER

TOWER SMARTFLEX UV FLEXO CLEANER

Toxicity	Not considered toxic to fish.
Acute aquatic toxicity	
Acute toxicity - fish	LC_{50}, 96 hour: > 1000 mg/l, Poecilia reticulata (Guppy)
Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: 1919 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC_{50}, 72 hours: 6999 mg/l, Scenedesmus subspicatus EC_{50}, 72 hour: > 969 mg/l, Pseudokirchneriella subcapitata OECD 201
Chronic aquatic toxicity	
Chronic toxicity - aquatic invertebrates	NOEC, 21 days: 0.5 mg/l, Daphnia magna

4-HYDROXY-4-METHYLPENTAN-2-ONE

Toxicity	No information available.
Acute aquatic toxicity	
Acute toxicity - fish	LC_{50}, 96 hours: >100 mg/l, Oryzias latipes (Red killifish)
Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: >1000 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC_{50}, 72 hours: >1000 mg/l, Pseudokirchneriella subcapitata
Chronic aquatic toxicity	
Chronic toxicity - aquatic invertebrates	NOEC, 21 days: 100 mg/l, Daphnia magna

12.2. Persistence and degradability

Persistence and degradability Expected to be readily biodegradable.

Ecological information on ingredients.

DIPROPYLENEGLYCOL METHYLETHER

Persistence and degradability	The substance is readily biodegradable.
Biodegradation	- Degradation (%) 96%: 28 days OECD 301F

4-HYDROXY-4-METHYLPENTAN-2-ONE

Persistence and degradability	The product is readily biodegradable.
Biodegradation	- Degradation 98.51%: 28 days OECD 301A

12.3. Bioaccumulative potential

Bioaccumulative potential Bioaccumulation is unlikely.

Partition coefficient No information available.

TOWER SMARTFLEX UV FLEXO CLEANER

Ecological information on ingredients.

DIPROPYLENEGLYCOL METHYLETHER

Bioaccumulative potential The product is not bioaccumulating.

Partition coefficient log Pow: 1.01

4-HYDROXY-4-METHYLPENTAN-2-ONE

Bioaccumulative potential Bioaccumulation is unlikely.

12.4. Mobility in soil

Mobility Miscible with water.

Ecological information on ingredients.

DIPROPYLENEGLYCOL METHYLETHER

Mobility The product is soluble in water.

Adsorption/desorption coefficient Water - Koc: 0.28 @ °C

4-HYDROXY-4-METHYLPENTAN-2-ONE

Mobility Miscible with water.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

Ecological information on ingredients.

DIPROPYLENEGLYCOL METHYLETHER

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

4-HYDROXY-4-METHYLPENTAN-2-ONE

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

12.6. Other adverse effects

Other adverse effects Not determined.

Ecological information on ingredients.

DIPROPYLENEGLYCOL METHYLETHER

Other adverse effects Not determined.

4-HYDROXY-4-METHYLPENTAN-2-ONE

Other adverse effects Not determined.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

TOWER SMARTFLEX UV FLEXO CLEANER

General information	Pregnant or breastfeeding women should not work with this product if there is any risk of exposure. Waste is classified as hazardous waste. Do not puncture or incinerate, even when empty.
Disposal methods	Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

SECTION 14: Transport information

General	The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

No transport warning sign required.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

SECTION 15: Regulatory information

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

EU legislation	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). 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 (as amended). Commission Regulation (EU) No 2015/830 of 28 May 2015.

15.2. Chemical safety assessment

Not applicable.

SECTION 16: Other information

TOWER SMARTFLEX UV FLEXO CLEANER

Abbreviations and acronyms used in the safety data sheet

ATE: Acute Toxicity Estimate.
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
CAS: Chemical Abstracts Service.
DNEL: Derived No Effect Level.
IATA: International Air Transport Association.
IMDG: International Maritime Dangerous Goods.
Kow: Octanol-water partition coefficient.
LC_{50}: Lethal Concentration to 50 % of a test population.
LD_{50}: Lethal Dose to 50% of a test population (Median Lethal Dose).
PBT: Persistent, Bioaccumulative and Toxic substance.
PNEC: Predicted No Effect Concentration.
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.
RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
vPvB: Very Persistent and Very Bioaccumulative.
IARC: International Agency for Research on Cancer.
MARPOL 73/78: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978.
cATpE: Converted Acute Toxicity Point Estimate.
BCF: Bioconcentration Factor.
BOD: Biochemical Oxygen Demand.
EC_{50}: 50% of maximal Effective Concentration.
LOAEC: Lowest Observed Adverse Effect Concentration.
LOAEL: Lowest Observed Adverse Effect Level.
NOAEC: No Observed Adverse Effect Concentration.
NOAEL: No Observed Adverse Effect Level.
NOEC: No Observed Effect Concentration.
LOEC: Lowest Observed Effect Concentration.
DMEL: Derived Minimal Effect Level.
EL50: Exposure Limit 50
hPa: Hectopascal
LL50: Lethal Loading fifty
OECD: Organisation for Economic Co-operation and Development
POW: Octanol-water partition coefficient
SCBA: self-contained breathing apparatus
STP: Sewage Treatment Plant
VOC: Volatile Organic Compounds

Classification abbreviations and acronyms

Acute Tox. = Acute toxicity
Aquatic Acute = Hazardous to the aquatic environment (acute)
Aquatic Chronic = Hazardous to the aquatic environment (chronic)

Key literature references and sources for data

Supplier's information.

Revision comments

NOTE: Lines within the margin indicate significant changes from the previous revision.

Revision date

10/12/2019

Version number

2.000

Supersedes date

05/12/2019

SDS number

59341

TOWER SMARTFLEX UV FLEXO CLEANER

SDS status	Approved.
Hazard statements in full	H319 Causes serious eye irritation. H335 May cause respiratory irritation. H361 Suspected of damaging fertility or the unborn child.
Signature	J Spenceley