SAFETY DATA SHEET
ACETIC ACID 50 - <80%

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

1.1. Product identifier

Product name	ACETIC ACID 50 - <80%
Product number	22889
Synonyms; trade names	VINEGAR ACID, ETHANOIC ACID, METHANE CARBOXYLIC ACID, ACETIC ACID FG 70% SOL, ACETIC ACID PURE 70% SOL, ACETIC ACID 50% SOLUTION, ACETIC ACID 60% SOLUTION, ACETIC ACID FG 60%, ACETIC ACID 60% SOL, ACETIC ACID 60% SOL, ACETIC ACID 74.5% TP, ACETIC ACID 65%, ACETIC ACID 65% T, ACETIC ACID 65% GMP+, ACETIC ACID 70% GMP+, ACETIC ACID 74,5%, ACETIC ACID 75%, ACETIC ACID 79%, ACETIC ACID PURE 79%, ACETIC ACID 80% V SOL, ACETIC ACID 74.9% SOL, ACETIC ACID PURE 80%, ACETIC ACID 80%, ACETIC ACID 80% T, ACETIC ACID 80% GMP, ACETIC ACID 75% (80%V) SOL, ACETIC ACID PURE 60% SOL, ACETIC ACID PURE 60% SOL CS
REACH registration number	01-2119475328-30-XXXX
CAS number	64-19-7
EU index number	607-002-00-6
EC number	200-580-7

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

Identified uses	Chemical pH control Intermediate for food or cosmetics For further information, see attached Exposure Scenario.

1.3. Details of the supplier of the safety data sheet

Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1.4. Emergency telephone number

Emergency telephone	SGS - +32 (0)3 575 55 55 (24h)
Sds No.	22889

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards	Not Classified
Health hazards	Skin Corr. 1B - H314 Eye Dam. 1 - H318

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Environmental hazards Not Classified

2.2. Label elements

EC number 200-580-7

Hazard pictograms

Signal word Danger

Hazard statements H314 Causes severe skin burns and eye damage.

Precautionary statements P260 Do not breathe vapour/ spray.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
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 in accordance with national regulations.

2.3. Other hazards

This substance is not classified as PBT or vPvB according to current EU criteria.

SECTION 3: Composition/information on ingredients

3.1. Substances

Product name ACETIC ACID 50 - <80%

REACH registration number 01-2119475328-30-XXXX

EU index number 607-002-00-6

CAS number 64-19-7

EC number 200-580-7

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 at once. Get medical attention if any discomfort continues.

Ingestion Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Rinse mouth thoroughly with water. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs. Give plenty of water to drink. Get medical attention.

Skin contact Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if any discomfort continues.

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 immediately. Continue to rinse.

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

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

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Ingestion May cause chemical burns in mouth and throat.

Skin contact Causes severe burns.

Eye contact Causes serious eye damage. May cause permanent damage if eye is not immediately irrigated.

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

Notes for the doctor Treat symptomatically.

SECTION 5: Firefighting measures

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

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 Avoid inhalation of spray mist and contact with skin and eyes. Provide adequate ventilation. Follow precautions for safe handling described in this safety data sheet

6.2. Environmental precautions

Environmental precautions 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 inert, damp, non-combustible material. Flush contaminated area with plenty of water. Collect and place in suitable waste disposal containers and seal securely. For waste disposal, see Section 13.

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 Avoid contact with skin and eyes. Avoid the formation of mists. Provide adequate ventilation.

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. Keep separate from food, feedstuffs, fertilisers and other sensitive material. Keep out of the reach of children.

Storage class Corrosive storage.

7.3. Specific end use(s)

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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

Ingredient comments No exposure limits known for ingredient(s).

8.2. Exposure controls

Protective equipment

Eye/face protection The following protection should be worn: Chemical splash goggles or face shield. 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. Butyl rubber. Thickness: 0.7 mm 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.

Respiratory protection If ventilation is inadequate, suitable respiratory protection must be worn. Wear a respirator fitted with the following cartridge: Combination filter, type A2/P3. EN 136/140/141/145/143/149

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance Liquid.

Colour Colourless.

Odour Characteristic.

Odour threshold No information available.

pH pH (diluted solution): 2.5 @ 2%

Melting point <-5°C

Initial boiling point and range > 100°C @ 760 mm Hg

Flash point > 61°C

Evaporation rate No information available.

Evaporation factor No information available.

Flammability (solid, gas) No information available.

Upper/lower flammability or explosive limits Upper flammable/explosive limit: 17.0 % Lower flammable/explosive limit: 5.4 %

Other flammability No information available.

Vapour pressure 15.7 mbar

Vapour density No information available.

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Relative density	1.01 - 1.07 @ 20°C
Bulk density	No information available.
Solubility(ies)	Soluble in water.
Partition coefficient	log Pow: -0.31
Auto-ignition temperature	427°C
Decomposition Temperature	No information available.
Viscosity	No information available.
Explosive properties	No information available.
Explosive under the influence of a flame	No information available.
Oxidising properties	Not available.

9.2. Other information

Other information	Not determined.
Refractive index	No information available.
Particle size	No information available.
Molecular weight	No information available.
Volatility	No information available.
Saturation concentration	No information available.
Critical temperature	No information available.
Volatile organic compound	No information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Not determined.

10.4. Conditions to avoid

Conditions to avoid Avoid excessive heat for prolonged periods of time.

10.5. Incompatible materials

Materials to avoid Strong acids. Strong alkalis. Strong oxidising agents. Strong reducing agents. Alcohols, glycols.

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

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11.1. Information on toxicological effects

Skin corrosion/irritation

Extreme pH Corrosive to skin.

Serious eye damage/irritation

Serious eye damage/irritation Causes serious eye damage.

Respiratory sensitisation

Respiratory sensitisation No specific test data are available.

Skin sensitisation

Skin sensitisation No specific test data are available.

Germ cell mutagenicity

Genotoxicity - in vitro No specific test data are available.

Carcinogenicity

Carcinogenicity No specific test data are available.

Reproductive toxicity

Reproductive toxicity - fertility No specific test data are available.

Specific target organ toxicity - single exposure

STOT - single exposure No specific test data are available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure No specific test data are available.

Aspiration hazard

Aspiration hazard Not available.

Inhalation May cause respiratory irritation.

Ingestion Causes burns.

Skin contact Causes burns.

Eye contact Causes serious eye damage. Severe irritation, burning and tearing.

SECTION 12: Ecological information

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. The product may affect the acidity (pH) of water which may have hazardous effects on aquatic organisms.

12.1. Toxicity

Toxicity Not considered toxic to fish.

Acute aquatic toxicity

Acute toxicity - fish LC_{50}, 96 hours: 75 mg/l, Fish

12.2. Persistence and degradability

Persistence and degradability The product is readily biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential The product does not contain any substances expected to be bioaccumulating.

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Partition coefficient log Pow: -0.31

12.4. Mobility in soil

Mobility The product is soluble in water.

12.5. Results of PBT and vPvB assessment

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

Cod 1.07

Other adverse effects Not determined.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information Do not puncture or incinerate, even when empty. Waste is classified as hazardous waste.

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 Wear protective clothing as described in Section 8 of this safety data sheet.

14.1. UN number

UN No. (ADR/RID) 2790

UN No. (IMDG) 2790

UN No. (ICAO) 2790

UN No. (ADN) 2790

14.2. UN proper shipping name

Proper shipping name (ADR/RID) ACETIC ACID SOLUTION

Proper shipping name (IMDG) ACETIC ACID SOLUTION

Proper shipping name (ICAO) ACETIC ACID SOLUTION

Proper shipping name (ADN) ACETIC ACID SOLUTION

14.3. Transport hazard class(es)

ADR/RID class 8

ADR/RID classification code C3

ADR/RID label 8

IMDG class 8

ICAO class/division 8

ADN class 8

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Transport labels

14.4. Packing group

ADR/RID packing group	II
IMDG packing group	II
ICAO packing group	II
ADN packing group	II

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user

EmS	F-A, S-B
ADR transport category	2
Emergency Action Code	•2R
Hazard Identification Number (ADR/RID)	80
Tunnel restriction code	(E)

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 determined.

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.
Restrictions (Annex XVII Regulation 1907/2006)	This product is/contains a substance that is included in REGULATION (EC) No 1907/2006 (REACH) ANNEX XVII - RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, MIXTURES AND ARTICLES. Entry number: 3

15.2. Chemical safety assessment

A chemical safety assessment has been carried out.

Inventories

EU - EINECS/ELINCS
EINECS

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SECTION 16: Other information

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.

Classification procedures according to Regulation (EC) 1272/2008

Skin Corr. 1B - H314: Calculation method. Eye Dam. 1 - H318: Calculation method.

Revision comments

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

ACETIC ACID 50 - <80%

Revision date	24/03/2022
Version number	3.001
Supersedes date	08/11/2019
SDS number	22889
SDS status	Approved.
Hazard statements in full	H314 Causes severe skin burns and eye damage. H318 Causes serious eye damage.
Signature	Jitendra Panchal

Exposure scenario
Distribution

Identification

Product name	Acetic Acid
REACH registration number	01-2119475328-30-XXXX
CAS number	64-19-7
EC number	200-580-7
EU index number	607-002-00-6
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Distribution
Process scope	Loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading distribution and associated laboratory activities.
Main sector	SU3 Industrial uses
Sector of use	SU1 Agriculture, forestry, fishery SU2 Mining (including offshore industries) SU4 Manufacture of food products SU5 Manufacture of textiles, leather, fur SU6a Manufacture of wood and wood products SU6b Manufacture of pulp, paper and paper products SU7 Printing and reproduction of recorded media

Environment

Environmental release category	ERC1 Manufacture of the substance ERC2 Formulation into mixture

Worker

Distribution

Process category	PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC15 Use as laboratory reagent.

2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

Environmental release category	ERC1 Manufacture of the substance ERC2 Formulation into mixture
SPERC	ESVOC SPERC 1.1b.v1

Product characteristics

Physical state	Liquid, vapour pressure > 10 kPa at STP
Concentration details	Covers concentrations up to 100 %. Unless otherwise stated.

Amounts used

Daily amount per site: 1.15 tonnes
Annual amount per site: 340 tonnes

Environmental factors not influenced by risk management measures

Dilution	Receiving surface water flow: 18000 m³/day

Risk management measures

STP type	Municipal STP.
STP details	Assumed onsite sewage treatment plant flow: 2000 m³/day

2. Conditions of use affecting exposure (Workers - Health 1)

Control of workers exposure

Process category	PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

Product characteristics

Physical state	Liquid, vapour pressure > 10 kPa at STP
Concentration details	Covers concentrations up to 100 %. Unless otherwise stated.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	Palm of both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting workers exposure

Distribution

Setting	Indoor/outdoor use.
Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.
Ventilation rate	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Store substance within a closed system. Locate bulk storage outdoors. Handle substance within a closed system. Provide extract ventilation to points where emissions occur. Efficiency of at least 90%

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Assumes a good basic standard of occupational hygiene is implemented. Avoid carrying out activities involving exposure for more than 1 hour.

2. Conditions of use affecting exposure (Workers - Health 2)

Control of workers exposure

Process category	PROC4 Chemical production where opportunity for exposure arises PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Product characteristics

Physical state	Liquid, vapour pressure > 10 kPa at STP
Concentration details	Covers concentrations up to 100 %. Unless otherwise stated.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	Palm of both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting workers exposure

Setting	Indoor.
Temperature	Assumes activities are at room temperature.
Ventilation rate	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Provide extract ventilation to points where emissions occur. Efficiency of at least 90%

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Assumes a good basic standard of occupational hygiene is implemented.

2. Conditions of use affecting exposure (Workers - Health 3)

Control of workers exposure

Process category	PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

Product characteristics

Physical state	Liquid, vapour pressure > 10 kPa at STP
Concentration details	Covers concentrations up to 100 %. Unless otherwise stated.

Distribution

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts Both hands. Covers skin contact area up to 960 cm².

Other given operational conditions affecting workers exposure

Temperature Assumes activities are at room temperature.

Ventilation rate Ensure operation is undertaken outdoors. , or: Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Clear transfer lines prior to de-coupling. Provide extract ventilation to points where emissions occur. Efficiency of at least 90% Drain or remove substance from equipment prior to break-in or maintenance.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

If above technical/organisational control measures are not feasible, then adopt following PPE:
Wear a respirator conforming to EN140 with Type A/P2 filter or better.
Wear suitable gloves tested to EN374.

2. Conditions of use affecting exposure (Workers - Health 4)

Control of workers exposure

Process category PROC15 Use as laboratory reagent.

Product characteristics

Physical state Liquid, vapour pressure > 10 kPa at STP

Concentration details Covers concentrations up to 100 %. Unless otherwise stated.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts Palm of one hand. Covers skin contact area up to 240 cm².

Other given operational conditions affecting workers exposure

Setting Indoor use.

Temperature Assumes activities are at room temperature.

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Handle in a fume cupboard or under extract ventilation. Efficiency of at least 90%

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation (Environment 1)

Distribution

Environmental release category	ERC2 Formulation into mixture
Assessment method	Used EUSES model.
Environmental release	Water: 0.012 kg/day Air: 0.115 kg/day Soil: 0 kg/day
Environmental exposure	Fresh water: Exposure 0.088 mg/l, PNEC 3.058 mg/l, RCR 0.029 freshwater sediment: Exposure 0.327 mg/kg, PNEC 11.36 mg/kg, RCR 0.029 Marine water: Exposure 0.008 mg/l, PNEC 0.3058 mg/l, RCR 0.027 marine sediment: Exposure 0.031 mg/kg, PNEC 1.136 mg/kg, RCR 0.027 Effluent: Exposure 0.000727 mg/l, PNEC 85 mg/l, RCR 0 Agriculture soil: Exposure 0.004 mg/kg, PNEC 0.478 mg/kg, RCR 0.009

3. Exposure estimation (Health 1)

Process category	PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
Assessment method	ECETOC TRA v2.0 Worker
Exposure	Worker - dermal, long-term - systemic: Exposure 1.371 mg/kg/day, DNEL , RCR Worker - dermal, long-term - local: Exposure 0.2 mg/cm², DNEL , RCR Worker - inhalation, long-term - local and systemic: Exposure 17.52 mg/m³, DNEL , RCR 0.701

3. Exposure estimation (Health 2)

Exposure	Worker - inhalation, long-term - local and systemic: Exposure 12.51 mg/m³, DNEL 25 mg/m³, RCR 0.5 Worker - dermal, long-term - systemic: Exposure 0.686 mg/kg/day, DNEL , RCR Worker - dermal, long-term - local: Exposure 0.1 mg/cm², DNEL , RCR

3. Exposure estimation (Health 3)

Exposure	Worker - inhalation, long-term - local and systemic: Exposure 17.52 mg/m³, DNEL 25 mg/m³, RCR 0.701 Worker - dermal, long-term - systemic: Exposure 13.71 mg/kg/day, DNEL , RCR Worker - dermal, long-term - local: Exposure 1 mg/cm², DNEL , RCR

3. Exposure estimation (Health 4)

Exposure	Worker - inhalation, long-term - local and systemic: Exposure 2.502 mg/m³, DNEL 25 mg/m³, RCR 0.1 Worker - dermal, long-term - systemic: Exposure 0.034 mg/kg/day, DNEL , RCR Worker - dermal, long-term - local: Exposure 0.01 mg/cm², DNEL , RCR

Exposure scenario
Formulation

Identification

Product name	Acetic Acid
REACH registration number	01-2119475328-30-XXXX
CAS number	64-19-7
EC number	200-580-7
EU index number	607-002-00-6
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Formulation
Process scope	Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tabletting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.
Main sector	SU3 Industrial uses
Sector of use	SU10 Formulation [mixing] of preparations and/or re-packaging

Environment

Environmental release category	ERC2 Formulation into mixture
SPERC	ESVOC SPERC 2.2.v1

Worker

Formulation

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC5 Mixing or blending in batch processes PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC14 Tabletting, compression, extrusion, pelletisation, granulation PROC15 Use as laboratory reagent.

2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

Environmental release category	ERC2 Formulation into mixture
SPERC	ESVOC SPERC 2.2.v1

Product characteristics

Physical state	Liquid, vapour pressure > 10 kPa at STP
Concentration details	Covers concentrations up to 100 %.

Amounts used

Daily amount per site: 90 tonnes
Annual amount per site: 30000 tonnes

Environmental factors not influenced by risk management measures

Dilution	Receiving surface water flow: 18000 m³/day

Risk management measures

STP type	Municipal STP.
STP details	Assumed onsite sewage treatment plant flow: 2000 m³/day

2. Conditions of use affecting exposure (Workers - Health 1)

Control of workers exposure

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Storage General exposures (closed systems) With sample collection

Product characteristics

Physical state	Liquid, vapour pressure > 10 kPa at STP
Concentration details	Covers concentrations up to 100 %.

Formulation

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts Palm of both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting workers exposure

Setting Indoor use.

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Locate bulk storage outdoors. Handle substance within a closed system. Sample via a closed loop or other system to avoid exposure. Provide extract ventilation to points where emissions occur. Efficiency of at least 90%

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Avoid carrying out activities involving exposure for more than 1 hour.

2. Conditions of use affecting exposure (Workers - Health 2)

Control of workers exposure

Process category PROC4 Chemical production where opportunity for exposure arises
PROC5 Mixing or blending in batch processes
PROC14 Tabletting, compression, extrusion, pelletisation, granulation

General exposures (open systems) Mixing operations (open systems)

Product characteristics

Physical state Liquid, vapour pressure > 10 kPa at STP

Concentration details Covers concentrations up to 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts Palm of both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Provide extract ventilation to points where emissions occur. Efficiency of at least 90%

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

2. Conditions of use affecting exposure (Workers - Health 3)

Control of workers exposure

Formulation

Process category	PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) Bulk transfers Drum/batch transfers Drum and small package filling

Product characteristics

Physical state	Liquid, vapour pressure > 10 kPa at STP
Concentration details	Concentration of substance in product: 100%

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	Covers skin contact area up to 960 cm². (Default)

Other given operational conditions affecting workers exposure

Setting	Indoor.
Temperature	Assumes activities are at room temperature.
Ventilation rate	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Efficiency of at least 90% Drain down and flush system prior to equipment break-in or maintenance.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

2. Conditions of use affecting exposure (Workers - Health 4)

Control of workers exposure

Process category	PROC15 Use as laboratory reagent.

Product characteristics

Physical state	Liquid, vapour pressure > 10 kPa at STP
Concentration details	Concentration of substance in product: 100%

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	Palm of one hand. Covers skin contact area up to 240 cm².

Formulation

Other given operational conditions affecting workers exposure

Setting	Indoor use.
Temperature	Assumes activities are at room temperature.
Ventilation rate	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Handle in a fume cupboard or under extract ventilation.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation (Environment 1)

Environmental release category	ERC2 Formulation into mixture
Assessment method	Used EUSES model.
Environmental release	Water: 450 kg/day Air: 2250 kg/day Soil: 0 kg/day
Environmental exposure	Fresh water: Exposure 2.93 mg/l, PNEC 3.058 mg/l, RCR 0.958 freshwater sediment: Exposure 10.9 mg/kg, PNEC 11.36 mg/kg, RCR 0.96 Marine water: Exposure 0.93 mg/l, PNEC 0.3058 mg/l, RCR 0.958 marine sediment: Exposure 1.09 mg/kg, PNEC 1.136 mg/kg, RCR 0.96 Effluent: Exposure 28.4 mg/l, PNEC 85 mg/l, RCR 0.334 Agriculture soil: Exposure 0.123 mg/kg, PNEC 0.478 mg/kg, RCR 0.262

3. Exposure estimation (Health 1)

Assessment method	ECETOC TRA v2.0 Worker
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 17.52 mg/m³, DNEL 25 mg/m³, RCR 0.701 Worker - dermal, long-term - systemic: Exposure 1.371 mg/kg/day, DNEL , RCR Worker - dermal, long-term - local: Exposure 0.2 mg/cm², DNEL , RCR

3. Exposure estimation (Health 2)

Assessment method	ECETOC TRA v2.0 Worker
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 12.51 mg/m³, DNEL 25 mg/m³, RCR 0.5 Worker - dermal, long-term - systemic: Exposure 0.343 mg/kg/day, DNEL , RCR Worker - dermal, long-term - local: Exposure 0.1 mg/cm², DNEL , RCR

3. Exposure estimation (Health 3)

Assessment method	ECETOC TRA v2.0 Worker
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 12.51 mg/m³, DNEL 25 mg/m³, RCR 0.5 Worker - dermal, long-term - systemic: Exposure 0.686 mg/kg/day, DNEL , RCR Worker - dermal, long-term - local: Exposure 0.1 mg/cm², DNEL , RCR

3. Exposure estimation (Health 4)

Formulation

Assessment method	ECETOC TRA v2.0 Worker
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 2.502 mg/m³, DNEL 25 mg/m³, RCR 0.1 Worker - dermal, long-term - systemic: Exposure 0.034 mg/kg/day, DNEL , RCR Worker - dermal, long-term - local: Exposure 0.01 mg/cm², DNEL , RCR

Exposure scenario
Use as cleaning agent - Industrial

Identification

Product name	Acetic Acid
REACH registration number	01-2119475328-30-XXXX
CAS number	64-19-7
EC number	200-580-7
EU index number	607-002-00-6
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use as cleaning agent - Industrial
Process scope	Covers the use as a component of cleaning products, including transfer from storage, pouring/unloading from drums or containers and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand), related equipment cleaning and maintenance.
Main sector	SU3 Industrial uses
Sector of use	SU5 Manufacture of textiles, leather, fur

Environment

Environmental release category	ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
SPERC	ESVOC SPERC 4.4a.v1

Worker

Use as cleaning agent - Industrial

Process category	PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC7 Industrial spraying PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC10 Roller application or brushing PROC13 Treatment of articles by dipping and pouring.

2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

Environmental release category	ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
SPERC	ESVOC SPERC 4.4a.v1

Amounts used

Daily amount per site: 5 tonnes
Annual amount per site: 100 tonnes

Environmental factors not influenced by risk management measures

Dilution	Receiving surface water flow: 18000 m³/day

Risk management measures

STP type	Municipal STP.
STP details	Assumed onsite sewage treatment plant flow: 2000 m³/day

2. Conditions of use affecting exposure (Workers - Health 1)

Control of workers exposure

Process category	PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Automated process with (semi) closed systems Application of cleaning products in closed systems

Product characteristics

Physical state	Liquid, vapour pressure > 10 kPa at STP
Concentration details	Concentration of substance in product: 100%

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	Palm of both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting workers exposure

Setting	Outdoor.

Use as cleaning agent - Industrial

Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.
Ventilation rate	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Locate bulk storage outdoors. Handle substance within a closed system. Ensure material transfers are under containment or extract ventilation.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Assumes a good basic standard of occupational hygiene is implemented. Avoid carrying out activities involving exposure for more than 1 hour.

2. Conditions of use affecting exposure (Workers - Health 2)

Control of workers exposure

Process category	PROC4 Chemical production where opportunity for exposure arises PROC13 Treatment of articles by dipping and pouring. Use in contained batch processes Degreasing small objects in cleaning station

Product characteristics

Physical state	Liquid, vapour pressure > 10 Pa (STP)
Concentration details	Covers concentrations up to 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	Palm of both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting workers exposure

Setting	Indoor use.
Temperature	Assumes activities are at room temperature.
Ventilation rate	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Efficiency of at least 90%

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Assumes a good basic standard of occupational hygiene is implemented. Avoid carrying out operation for more than 4 hours.

2. Conditions of use affecting exposure (Workers - Health 3)

Control of workers exposure

Process category	PROC7 Industrial spraying PROC10 Roller application or brushing Cleaning with low-pressure washers Cleaning with high-pressure washers Manual Surface cleaning

Product characteristics

Physical state	Liquid, vapour pressure > 10 kPa at STP

Use as cleaning agent - Industrial

Concentration details	Concentration of substance in product: 5%

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	Hands and forearms. Covers skin contact area up to 1500 cm².

Other given operational conditions affecting workers exposure

Setting	Indoor/outdoor use.
Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.
Ventilation rate	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or: Ensure operation is undertaken outdoors.

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Limit the substance content in the product to 5%.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Assumes a good basic standard of occupational hygiene is implemented. Avoid carrying out operation for more than 4 hours. Avoid carrying out activities involving exposure for more than 1 hour.

Risk management measures

Wear suitable gloves tested to EN374.

2. Conditions of use affecting exposure (Workers - Health 4)

Control of workers exposure

Process category	PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities Bulk transfers Filling/preparation of equipment from drums or containers. Equipment cleaning and maintenance

Product characteristics

Physical state	Liquid, vapour pressure > 10 kPa at STP
Concentration details	Covers concentrations up to 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	Both hands. Covers skin contact area up to 960 cm².

Other given operational conditions affecting workers exposure

Setting	Indoor.
Temperature	Assumes activities are at room temperature.
Ventilation rate	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Use as cleaning agent - Industrial

Technical protective measures Ensure material transfers are under containment or extract ventilation. Drain or remove substance from equipment prior to break-in or maintenance. Provide extract ventilation to points where emissions occur. Efficiency of at least 90%

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Wear suitable gloves tested to EN374.

3. Exposure estimation (Environment 1)

Assessment method Used EUSES model.

Environmental release Water: 0.5 kg/day
Air: 1500 kg/day
Soil: 0 kg/day

Environmental exposure Fresh water: Exposure 0.091 mg/l, PNEC 3.058 mg/l, RCR 0.03
freshwater sediment: Exposure 0.338 mg/kg, PNEC 11.36 mg/kg, RCR 0.03
Marine water: Exposure 0.009 mg/l, PNEC 0.3058 mg/l, RCR 0.028
marine sediment: Exposure 0.032 mg/kg, PNEC 1.136 mg/kg, RCR 0.028
Effluent: Exposure 0.032 mg/l, PNEC 85 mg/l, RCR 0
Agriculture soil: Exposure 0.007 mg/kg, PNEC 0.478 mg/kg, RCR 0.015

3. Exposure estimation (Health 1)

Process category PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

Assessment method ECETOC TRA v2.0 Worker

Exposure Worker - inhalation, long-term - local and systemic: Exposure 17.52 mg/m³, DNEL 25 mg/m³, RCR 0.701
Worker - dermal, long-term - systemic: Exposure 1. mg/kg/day, DNEL , RCR
Worker - combined, short-term - systemic: Exposure 0.2 mg/cm², DNEL , RCR

3. Exposure estimation (Health 2)

Process category PROC4 Chemical production where opportunity for exposure arises
PROC13 Treatment of articles by dipping and pouring.

Assessment method ECETOC TRA v2.0 Worker

Exposure Worker - inhalation, long-term - local and systemic: Exposure 12.51 mg/m³, DNEL 25 mg/m³, RCR 0.5
Worker - dermal, long-term - systemic: Exposure 0.686 mg/kg/day, DNEL , RCR
Worker - dermal, long-term - local: Exposure 0.2 mg/cm², DNEL , RCR

3. Exposure estimation (Health 3)

Process category PROC7 Industrial spraying
PROC10 Roller application or brushing

Assessment method ECETOC TRA v2.0 Worker

Use as cleaning agent - Industrial

Exposure	Worker - inhalation, long-term - local and systemic: Exposure 17.52 mg/m³, DNEL 25 mg/m³, RCR 0.701 Worker - dermal, long-term - systemic: Exposure mg/kg/day, DNEL , RCR Worker - dermal, long-term - local: Exposure 2 mg/cm², DNEL , RCR

3. Exposure estimation (Health 4)

Process category	PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
Assessment method	ECETOC TRA v2.0 Worker
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 12.51 mg/m³, DNEL 25 mg/m³, RCR 0.5 Worker - dermal, long-term - systemic: Exposure 0. mg/kg/day, DNEL , RCR Worker - dermal, long-term - local: Exposure 0.1 mg/cm², DNEL , RCR

Exposure scenario
Oil field drilling - Industrial

Identification

Product name	Acetic Acid
REACH registration number	01-2119475328-30-XXXX
CAS number	64-19-7
EC number	200-580-7
EU index number	607-002-00-6
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Oil field drilling - Industrial
Process scope	Oil field well drilling operations (including drilling muds and well cleaning), including material transfers, onsite formulation, well head operations, shaker room activities and related maintenance.
Main sector	SU3 Industrial uses
Sector of use	SU10 Formulation [mixing] of preparations and/or re-packaging

Environment

Environmental release category	ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
SPERC	ESVOC SPERC 4.5a.v1

Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

Oil field drilling - Industrial

2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

Environmental release category	ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
SPERC	ESVOC SPERC 4.5a.v1

Product characteristics

Physical state	Liquid, vapour pressure > 10 kPa at STP
Concentration details	Covers concentrations up to 100 %. Unless otherwise stated.

Amounts used

Daily amount per site: 5 tonnes
Annual amount per site: 150 tonnes

Environmental factors not influenced by risk management measures

Dilution	Receiving surface water flow: 18000 m³/day

Risk management measures

STP type	Municipal STP.
STP details	Assumed onsite sewage treatment plant flow: 2000 m³/day

2. Conditions of use affecting exposure (Workers - Health 1)

Control of workers exposure

Process category	PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions General exposures (closed systems)

Product characteristics

Physical state	Liquid, vapour pressure > 10 kPa at STP
Concentration details	Covers concentrations up to 100 %. Unless otherwise stated.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	Palm of both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting workers exposure

Setting	Indoor/outdoor use.
Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.
Ventilation rate	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or: Ensure operation is undertaken outdoors.

Technical conditions and measures at process level (source) to prevent release

Oil field drilling - Industrial

Technical protective measures Handle substance within a closed system. Use a sampling system designed to control exposure. Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Efficiency of at least 90%

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented. Avoid carrying out operation for more than 4 hours. Avoid carrying out activities involving exposure for more than 15 minutes.

2. Conditions of use affecting exposure (Workers - Health 2)

Control of workers exposure

Process category PROC4 Chemical production where opportunity for exposure arises

General exposures (open systems)

Product characteristics

Physical state Liquid, vapour pressure > 10 kPa at STP

Concentration details Covers concentrations up to 100 %. Unless otherwise stated.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts Palm of both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting workers exposure

Setting Indoor/outdoor use.

Temperature Assumes activities are at room temperature.

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or: Ensure operation is undertaken outdoors.

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Efficiency of at least 90% Drill floor operations Limit the substance content in the product to 25%.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented. Avoid carrying out operation for more than 4 hours.

Risk management measures

Wear suitable gloves tested to EN374.

2. Conditions of use affecting exposure (Workers - Health 3)

Control of workers exposure

Process category PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

Bulk transfers Filling/preparation of equipment from drums or containers. Equipment cleaning and maintenance

Oil field drilling - Industrial

Product characteristics

Physical state Liquid, vapour pressure > 10 kPa at STP

Concentration details Covers concentrations up to 100 %. Unless otherwise stated.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts Both hands. Covers skin contact area up to 960 cm².

Other given operational conditions affecting workers exposure

Setting Indoor/outdoor use.

Temperature Assumes activities are at room temperature.

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or: Ensure operation is undertaken outdoors.

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Efficiency of at least 97% Drill floor operations Limit the substance content in the product to 25%.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented. Avoid carrying out activities involving exposure for more than 1 hour.

Risk management measures

Wear suitable gloves tested to EN374.

3. Exposure estimation (Environment 1)

Environmental release category ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)

Assessment method Used EUSES model.

Environmental release Water: 350 kg/day
Air: 50 kg/day
Soil: 0 kg/day

Environmental exposure Fresh water: Exposure mg/l, PNEC 3.058 mg/l, RCR 0.752
freshwater sediment: Exposure 8.55 mg/kg, PNEC 11.36 mg/kg, RCR 0.753
Marine water: Exposure 0.23 mg/l, PNEC 0.3058 mg/l, RCR 0.752
marine sediment: Exposure 0.853 mg/kg, PNEC 1.136 mg/kg, RCR 0.751
Effluent: Exposure 22.1 mg/l, PNEC 85 mg/l, RCR 0.26
Agriculture soil: Exposure 0.049 mg/kg, PNEC 0.478 mg/kg, RCR 0.104

3. Exposure estimation (Health 1)

Process category PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

Assessment method ECETOC TRA v2.0 Worker

Oil field drilling - Industrial

Exposure	Worker - inhalation, long-term - local and systemic: Exposure 15.76 mg/m³, DNEL 25 mg/m³, RCR 0.631 Worker - dermal, long-term - systemic: Exposure 0.343 mg/kg/day, DNEL , RCR Worker - combined, short-term - systemic: Exposure 0.1 mg/cm², DNEL , RCR

3. Exposure estimation (Health 2)

Process category	PROC4 Chemical production where opportunity for exposure arises
Assessment method	ECETOC TRA v2.0 Worker
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 21.02 mg/m³, DNEL 25 mg/m³, RCR 0.841 Worker - dermal, long-term - systemic: Exposure 6.857 mg/kg/day, DNEL , RCR Worker - dermal, long-term - local: Exposure 1 mg/m³, DNEL , RCR

3. Exposure estimation (Health 3)

Process category	PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
Assessment method	ECETOC TRA v2.0 Worker
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 17.52 mg/m³, DNEL 25 mg/m³, RCR 0.701 Worker - dermal, long-term - systemic: Exposure 13.71 mg/kg/day, DNEL , RCR Worker - dermal, long-term - local: Exposure 1 mg/cm², DNEL , RCR

Exposure scenario
Laboratory reagents - Industrial

Identification

Product name	Acetic Acid
REACH registration number	01-2119475328-30-XXXX
CAS number	64-19-7
EC number	200-580-7
EU index number	607-002-00-6
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Laboratory reagents - Industrial
Process scope	Use of the substance within laboratory settings, including material transfers and equipment cleaning.
Main sector	SU3 Industrial uses
Sector of use	SU10 Formulation [mixing] of preparations and/or re-packaging

Environment

Environmental release category	ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)

Worker

Process category	PROC10 Roller application or brushing PROC15 Use as laboratory reagent.

2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

Environmental release category	ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)

Amounts used

Daily amount per site: 0.1 tonnes
Annual amount per site: 2 tonnes

Environmental factors not influenced by risk management measures

Laboratory reagents - Industrial

Dilution	Receiving surface water flow: 18000 m³/day

Risk management measures

STP type	Municipal STP.
STP details	Assumed onsite sewage treatment plant flow: 2000 m³/day

2. Conditions of use affecting exposure (Workers - Health 1)

Control of workers exposure

Process category	PROC10 Roller application or brushing
	Cleaning

Product characteristics

Physical state	Liquid, vapour pressure > 10 kPa at STP
Concentration details	Covers concentrations up to 100 %. Unless otherwise stated.

Frequency and duration of use

Application duration: 1 hour

Human factors not influenced by risk management

Potentially exposed body parts	Both hands. Covers skin contact area up to 960 cm².

Other given operational conditions affecting workers exposure

Setting	Outdoor.
Temperature	Assumes activities are at room temperature.
Ventilation rate	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Assumes a good basic standard of occupational hygiene is implemented. Avoid carrying out activities involving exposure for more than 1 hour.

Risk management measures

Wear suitable gloves tested to EN374.

2. Conditions of use affecting exposure (Workers - Health 2)

Control of workers exposure

Process category	PROC15 Use as laboratory reagent.

Product characteristics

Physical state	Liquid, vapour pressure > 10 kPa at STP
Concentration details	Covers concentrations up to 100 %. Unless otherwise stated.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	Covers skin contact area up to 240 cm². Palm of one hand.

Other given operational conditions affecting workers exposure

Laboratory reagents - Industrial

Setting	Indoor.
Temperature	Assumes activities are at room temperature.
Ventilation rate	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Handle in a fume cupboard or under extract ventilation.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation (Environment 1)

Environmental release category	ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
Assessment method	Used EUSES model.
Environmental release	Water: 2 kg/day Air: 2.5 kg/day Soil: 0 kg/day
Environmental exposure	Fresh water: Exposure 0.101 mg/l, PNEC 3.058 mg/l, RCR 0.033 freshwater sediment: Exposure 0.374 mg/kg, PNEC 11.36 mg/kg, RCR 0.033 Marine water: Exposure 0.01 mg/l, PNEC 0.3058 mg/l, RCR 0.031 marine sediment: Exposure 0.035 mg/kg, PNEC 1.136 mg/kg, RCR 0.031 Effluent: Exposure 0.126 mg/l, PNEC 85 mg/l, RCR 0.001 Agriculture soil: Exposure 0.005 mg/kg, PNEC 0.478 mg/kg, RCR 0.01

3. Exposure estimation (Health 1)

Process category	PROC10 Roller application or brushing
Assessment method	ECETOC TRA v2.0 Worker
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 17.52 mg/m³, DNEL 25 mg/m³, RCR 0.701 Worker - dermal, long-term - systemic: Exposure 27.43 mg/kg/day, DNEL , RCR Worker - dermal, long-term - local: Exposure 2 mg/cm², DNEL , RCR

3. Exposure estimation (Health 2)

Process category	PROC15 Use as laboratory reagent.
Assessment method	ECETOC TRA v2.0 Worker
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 2.502 mg/m³, DNEL 25 mg/m³, RCR 0.1 Worker - combined, short-term - systemic: Exposure 0.034 mg/kg, DNEL , RCR Worker - combined, short-term - systemic: Exposure 0.01 mg/cm², DNEL , RCR

Exposure scenario
Water treatment chemicals - Industrial

Identification

Product name	Acetic Acid
REACH registration number	01-2119475328-30-XXXX
CAS number	64-19-7
EC number	200-580-7
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Water treatment chemicals - Industrial
Process scope	Covers the use of the substance for the treatment of water at industrial facilities in open and closed systems.
Main sector	SU3 Industrial uses
Sector of use	SU10 Formulation [mixing] of preparations and/or re-packaging
Environment	
Environmental release category	ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
SPERC	ESVOC SPERC 3.22a.v1
Worker	
Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC13 Treatment of articles by dipping and pouring.

2. Conditions of use affecting exposure (Industrial - Environment 1)

Water treatment chemicals - Industrial

Control of environmental exposure

Environmental release category	ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
SPERC	ESVOC SPERC 3.22a.v1

Amounts used

Daily amount per site: 0.1 tonnes
Annual amount per site: 30 tonnes

Environmental factors not influenced by risk management measures

Dilution	Receiving surface water flow: 18000 m³/day

Risk management measures

STP type	Municipal STP.
STP details	Assumed onsite sewage treatment plant flow: 2000 m³/day

2. Conditions of use affecting exposure (Workers - Health 1)

Control of workers exposure

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition General exposures (closed systems)

Product characteristics

Physical state	Liquid, vapour pressure > 10 kPa at STP
Concentration details	Covers concentrations up to 100 %. Unless otherwise stated.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	Palm of both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting workers exposure

Setting	Indoor/outdoor use.
Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.
Ventilation rate	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or: Ensure operation is undertaken outdoors.

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Store substance within a closed system. Handle substance within a closed system.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Assumes a good basic standard of occupational hygiene is implemented. Avoid carrying out operation for more than 4 hours.

2. Conditions of use affecting exposure (Workers - Health 2)

Water treatment chemicals - Industrial

Control of workers exposure

Process category	PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities Equipment maintenance Drum/batch transfers

Product characteristics

Physical state	Liquid, vapour pressure > 10 kPa at STP
Concentration details	Covers concentrations up to 100 %. Unless otherwise stated.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	Both hands. Covers skin contact area up to 960 cm².

Other given operational conditions affecting workers exposure

Setting	Indoor/outdoor use.
Temperature	Assumes activities are at room temperature.
Ventilation rate	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or: Ensure operation is undertaken outdoors.

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Use drum pumps. Avoid spillage when withdrawing pump. Drain or remove substance from equipment prior to break-in or maintenance. Provide extract ventilation to points where emissions occur. Efficiency of at least 90%

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Wear suitable gloves tested to EN374.

2. Conditions of use affecting exposure (Workers - Health 3)

Control of workers exposure

Process category	PROC4 Chemical production where opportunity for exposure arises PROC13 Treatment of articles by dipping and pouring. General exposures (open systems) Pouring from small containers

Product characteristics

Physical state	Liquid, vapour pressure > 10 kPa at STP
Concentration details	Covers concentrations up to 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	Palm of both hands. Covers skin contact area up to 480 cm².

Water treatment chemicals - Industrial

Other given operational conditions affecting workers exposure

Setting	Indoor/outdoor use.
Temperature	Assumes activities are at room temperature.
Ventilation rate	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or: Ensure operation is undertaken outdoors.

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Provide extract ventilation to points where emissions occur. Efficiency of at least 90%

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Assumes a good basic standard of occupational hygiene is implemented. Avoid carrying out operation for more than 4 hours.

Risk management measures

Wear suitable gloves tested to EN374.

3. Exposure estimation (Environment 1)

Environmental release category	ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
Assessment method	Used EUSES model.
Environmental release	Water: 95 kg/day Air: 5 kg/day Soil: 0 kg/day
Environmental exposure	Fresh water: Exposure 0.688 mg/l, PNEC 3.058 mg/l, RCR 0.225 freshwater sediment: Exposure 2.56 mg/kg, PNEC 11.36 mg/kg, RCR 0.225 Marine water: Exposure 0.068 mg/l, PNEC 0.3058 mg/l, RCR 0.223 marine sediment: Exposure 0.254 mg/kg, PNEC 1.136 mg/kg, RCR 0.224 Effluent: Exposure 6.01 mg/l, PNEC 85 mg/l, RCR 0.071 Agriculture soil: Exposure 0.017 mg/kg, PNEC 0.478 mg/kg, RCR 0.035

3. Exposure estimation (Health 1)

Process category	PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
Assessment method	ECETOC TRA v2.0 Worker
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 21.02 mg/m³, DNEL 25 mg/m³, RCR 0.841 Worker - dermal, long-term - systemic: Exposure 6.857 mg/kg/day, DNEL , RCR Worker - dermal, long-term - local: Exposure 1 mg/m³, DNEL , RCR

3. Exposure estimation (Health 2)

Process category	PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
Assessment method	ECETOC TRA v2.0 Worker

Water treatment chemicals - Industrial

Exposure	Worker - inhalation, long-term - local and systemic: Exposure 12.51 mg/m³, DNEL 25 mg/m³, RCR 0.5 Worker - dermal, long-term - systemic: Exposure 0.686 mg/kg/day, DNEL , RCR Worker - dermal, long-term - local: Exposure 0.1 mg/cm², DNEL , RCR

3. Exposure estimation (Health 3)

Process category	PROC13 Treatment of articles by dipping and pouring.
Assessment method	ECETOC TRA v2.0 Worker
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 12.51 mg/m³, DNEL 25 mg/m³, RCR 0.5 Worker - dermal, long-term - systemic: Exposure 0.686 mg/kg/day, DNEL , RCR Worker - dermal, long-term - local: Exposure 0.1 mg/cm², DNEL , RCR

Exposure scenario
Cleaning agents - Professional

Identification

Product name	Acetic Acid
REACH registration number	01-2119475328-30-XXXX
CAS number	64-19-7
EC number	200-580-7
EU index number	607-002-00-6
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Cleaning agents - Professional
Process scope	Covers the use as a component of cleaning products, including pouring/unloading from drums or containers and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand).
Main sector	SU22 Professional uses

Environment

Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
SPERC	ESVOC SPERC 8.4b.v1

Worker

Cleaning agents - Professional

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC10 Roller application or brushing PROC11 Non industrial spraying PROC13 Treatment of articles by dipping and pouring.

2. Conditions of use affecting exposure (Workers - Health 1)

Control of workers exposure

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises Automated process with (semi) closed systems Semi-automated process (e.g. semi-automatic application of floor care and maintenance products) Application of cleaning products in closed systems

Product characteristics

Physical state	Liquid, vapour pressure > 10 kPa at STP
Concentration details	Covers concentrations up to 25 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	Palm of both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting workers exposure

Setting	Indoor/outdoor use.
Temperature	Assumes activities are at room temperature.
Ventilation rate	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or: Ensure operation is undertaken outdoors.

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Limit the substance content in the product to 25%. Handle substance within a closed system. Provide extract ventilation to points where emissions occur. Efficiency of at least 90%

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Cleaning agents - Professional

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

2. Conditions of use affecting exposure (Workers - Health 2)

Control of workers exposure

Process category

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

Filling/preparation of equipment from drums or containers. Equipment cleaning and maintenance

Product characteristics

Physical state

Liquid, vapour pressure > 10 kPa at STP

Concentration details

Concentration of substance in product: 25%

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts

Both hands. Covers skin contact area up to 960 cm^2.

Other given operational conditions affecting workers exposure

Setting

Indoor/outdoor use.

Temperature

Assumes activities are at room temperature.

Ventilation rate

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or: Ensure operation is undertaken outdoors.

Technical conditions and measures at process level (source) to prevent release

Technical protective measures

Limit the substance content in the product to 25%. Drain or remove substance from equipment prior to break-in or maintenance.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures

Assumes a good basic standard of occupational hygiene is implemented. Avoid carrying out activities involving exposure for more than 1 hour.

Risk management measures

Wear suitable respiratory protection (conforming to EN140 with type A filter or better) and gloves (type EN374) if regular skin contact likely.

2. Conditions of use affecting exposure (Workers - Health 3)

Control of workers exposure

Process category

PROC10 Roller application or brushing
PROC13 Treatment of articles by dipping and pouring.

Cleaning with low-pressure washers Manual Surface cleaning

Product characteristics

Physical state

Liquid, vapour pressure > 10 kPa at STP

Cleaning agents - Professional

Concentration details	Covers concentrations up to 5 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	Both hands. Covers skin contact area up to 960 cm².

Other given operational conditions affecting workers exposure

Setting	Indoor/outdoor use.
Temperature	Assumes activities are at room temperature.
Ventilation rate	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or: Ensure operation is undertaken outdoors.

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Limit the substance content in the product to 5%.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Assumes a good basic standard of occupational hygiene is implemented. Avoid carrying out activities involving exposure for more than 4 hours.

Risk management measures

Wear suitable gloves tested to EN374.

2. Conditions of use affecting exposure (Workers - Health 4)

Control of workers exposure

Process category	PROC11 Non industrial spraying Cleaning with high-pressure washers

Product characteristics

Physical state	Liquid, vapour pressure > 10 Pa (STP)
Concentration details	Covers concentrations up to 5 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	Hands and forearms. Covers skin contact area up to 1500 cm².

Other given operational conditions affecting workers exposure

Setting	Indoor/outdoor use.
Temperature	Assumes activities are at room temperature.
Ventilation rate	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or: Ensure operation is undertaken outdoors.

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Provide extract ventilation to points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Cleaning agents - Professional

Organisational measures	Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Wear a respirator conforming to EN140 with Type A/P2 filter or better.
Efficiency of at least 90%
Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Control of environmental exposure (Non-industrial)

Environmental release category	ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
SPERC	ESVOC SPERC 8.4b.v1

Environmental factors not influenced by risk management measures

Dilution	Receiving surface water flow: 18000 m³/day

Risk management measures

STP type	Municipal STP.
STP details	Assumed domestic sewage treatment plant flow: 2000 m³/day

3. Exposure estimation (Environment 1)

Environmental release category	ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
Assessment method	Used EUSES model.
Environmental release	Water: 0 kg/day Air: 0 kg/day Soil: 0 kg/day
Environmental exposure	Fresh water: Exposure 0.088 mg/l, PNEC 3.058 mg/l, RCR 0.029 freshwater sediment: Exposure 0.327 mg/kg, PNEC 11.36 mg/kg, RCR 0.029 Marine water: Exposure 0.008 mg/l, PNEC 0.3058 mg/l, RCR 0.027 marine sediment: Exposure 0.031 mg/kg, PNEC 1.136 mg/kg, RCR 0.027 Effluent: Exposure 0.000000834 mg/l, PNEC 85 mg/l, RCR 0 Agriculture soil: Exposure 0.004 mg/kg, PNEC 0.478 mg/kg, RCR 0.009

3. Exposure estimation (Health 1)

Process category	PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises
Assessment method	ECETOC TRA v2.0 Worker
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 22.52 mg/m³, DNEL 25 mg/m³, RCR 0.901 Worker - dermal, long-term - systemic: Exposure 6.857 mg/kg/day, DNEL , RCR Worker - dermal, long-term - local: Exposure 1 mg/cm², DNEL , RCR

3. Exposure estimation (Health 2)

Cleaning agents - Professional

Process category	PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
Assessment method	ECETOC TRA v2.0 Worker
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 21.02 mg/m³, DNEL 25 mg/m³, RCR 0.841 Worker - dermal, long-term - systemic: Exposure 13.71 mg/kg/day, DNEL , RCR Worker - dermal, long-term - local: Exposure 1 mg/cm², DNEL , RCR

3. Exposure estimation (Health 3)

Process category	PROC10 Roller application or brushing PROC13 Treatment of articles by dipping and pouring.
Assessment method	ECETOC TRA v2.0 Worker
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 21.02 mg/m³, DNEL 25 mg/m³, RCR 0.841 Worker - dermal, long-term - systemic: Exposure 27.43 mg/kg/day, DNEL , RCR Worker - dermal, long-term - local: Exposure 2 mg/cm², DNEL , RCR

3. Exposure estimation (Health 4)

Process category	PROC11 Non industrial spraying
Assessment method	ECETOC TRA v2.0 Worker
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 17.52 mg/m³, DNEL 25 mg/m³, RCR 0.701 Worker - dermal, long-term - systemic: Exposure 107.1 mg/kg/day, DNEL , RCR Worker - dermal, long-term - local: Exposure 5 mg/cm², DNEL , RCR

Exposure scenario
Agrochemicals - Professional

Identification

Product name	Acetic Acid
REACH registration number	01-2119475328-30-XXXX
CAS number	64-19-7
EC number	200-580-7
EU index number	607-002-00-6
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Agrochemicals - Professional
Process scope	Use as an agrochemical excipient for application by manual or machine spraying, smokes and fogging, including equipment clean-downs and disposal.
Main sector	SU22 Professional uses

Environment

Environmental release category	ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
SPERC	ESVOC SPERC 8.11a.v1

Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC4 Chemical production where opportunity for exposure arises PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC11 Non industrial spraying PROC13 Treatment of articles by dipping and pouring.

2. Conditions of use affecting exposure (Workers - Health 1)

Control of workers exposure

Agrochemicals - Professional

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC4 Chemical production where opportunity for exposure arises Storage With sample collection Mixing operations (closed systems) Mixing operations (open systems)

Product characteristics

Physical state	Liquid, vapour pressure > 10 kPa at STP
Concentration details	Covers concentrations up to 100 %.

Frequency and duration of use

Application duration: 4 hours

Human factors not influenced by risk management

Potentially exposed body parts	Palm of both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting workers exposure

Setting	Outdoor.
Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.
Ventilation rate	Ensure operation is undertaken outdoors. , or: Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Locate bulk storage outdoors. Store substance within a closed system. Ensure material transfers are under containment or extract ventilation.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Assumes a good basic standard of occupational hygiene is implemented. Avoid carrying out activities involving exposure for more than 4 hours.

Risk management measures

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

2. Conditions of use affecting exposure (Workers - Health 2)

Control of workers exposure

Process category	PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities Filling/preparation of equipment from drums or containers. Equipment cleaning and maintenance Disposal of wastes

Product characteristics

Physical state	Liquid, vapour pressure > 10 kPa at STP
Concentration details	Covers concentrations up to 100 %.

Agrochemicals - Professional

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts Palm of both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting workers exposure

Setting Indoor/outdoor use.

Temperature Assumes activities are at room temperature.

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Limit the substance content in the product to 5%. Use drum pumps. , or: Carefully pour from containers. Drain or remove substance from equipment prior to break-in or maintenance. Retain drain-downs in sealed storage pending disposal or for subsequent recycle.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented. Avoid carrying out operation for more than 4 hours. Avoid carrying out activities involving exposure for more than 1 hour.

Risk management measures

Wear suitable gloves tested to EN374.

2. Conditions of use affecting exposure (Workers - Health 3)

Control of workers exposure

Process category PROC11 Non industrial spraying

Product characteristics

Physical state Liquid, vapour pressure > 10 kPa at STP

Concentration details Avoid using at a product concentration greater than 5%.

Frequency and duration of use

Application duration: 4 hours

Human factors not influenced by risk management

Potentially exposed body parts Hands and forearms. Covers skin contact area up to 1500 cm².

Other given operational conditions affecting workers exposure

Setting Indoor use.

Temperature Assumes activities are at room temperature.

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Apply within a vented cab supplied with filtered air under positive pressure and with a protection factor of > 20.

Organisational measures to prevent/limit releases, dispersion and exposure

Agrochemicals - Professional

Organisational measures	Assumes a good basic standard of occupational hygiene is implemented. Avoid carrying out operation for more than 4 hours. Avoid carrying out activities involving exposure for more than 1 hour.

Risk management measures

If above technical/organisational control measures are not feasible, then adopt following PPE:
Wear a respirator conforming to EN140 with Type A/P2 filter or better.
Efficiency of at least 90%
Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.

2. Conditions of use affecting exposure (Workers - Health 4)

Control of workers exposure

Process category	PROC13 Treatment of articles by dipping and pouring.
	Ad hoc manual application via trigger sprays, dipping, etc.

Product characteristics

Physical state	Liquid, vapour pressure > 10 kPa at STP
Concentration details	Covers concentrations up to 5 %.

Frequency and duration of use

Application duration: 1 hour

Human factors not influenced by risk management

Potentially exposed body parts	Palm of both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting workers exposure

Setting	Indoor use.
Temperature	Assumes activities are at room temperature.
Ventilation rate	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Limit the substance content in the product to 5%.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Assumes a good basic standard of occupational hygiene is implemented. Avoid carrying out activities involving exposure for more than 1 hour.

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Control of environmental exposure (Non-industrial)

Environmental release category	ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
SPERC	ESVOC SPERC 8.11a.v1

Product characteristics

Physical state	Liquid, vapour pressure > 10 kPa at STP
Concentration details	Covers concentrations up to 100 %.

Environmental factors not influenced by risk management measures

Agrochemicals - Professional

Dilution	Receiving surface water flow: 18000 m³/day

Risk management measures

STP type	Municipal STP.
STP details	Assumed domestic sewage treatment plant flow: 2000 m³/day

3. Exposure estimation (Environment 1)

Environmental release category	ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
Assessment method	Used EUSES model.
Environmental release	Water: 0 kg/day Air: 0 kg/day Soil: 0 kg/day
Environmental exposure	Fresh water: Exposure 0.089 mg/l, PNEC 3.058 mg/l, RCR 0.029 freshwater sediment: Exposure 0.33 mg/kg, PNEC 11.36 mg/kg, RCR 0.029 Marine water: Exposure 0.008 mg/l, PNEC 0.3058 mg/l, RCR 0.027 marine sediment: Exposure 0.031 mg/kg, PNEC 1.136 mg/kg, RCR 0.027 Effluent: Exposure 0.008 mg/l, PNEC 85 mg/l, RCR 0 Agriculture soil: Exposure 0.004 mg/kg, PNEC 0.478 mg/kg, RCR 0.009

3. Exposure estimation (Health 1)

Process category	PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC4 Chemical production where opportunity for exposure arises
Assessment method	ECETOC TRA v2.0 Worker
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 21.02 mg/m³, DNEL 25 mg/m³, RCR 0.841 Worker - dermal, long-term - systemic: Exposure 6.857 mg/kg/day, DNEL , RCR Worker - dermal, long-term - local: Exposure 1 mg/cm², DNEL , RCR

3. Exposure estimation (Health 2)

Process category	PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
Assessment method	ECETOC TRA v2.0 Worker
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 21.02 mg/m³, DNEL 25 mg/m³, RCR 0.841 Worker - dermal, long-term - systemic: Exposure 13.71 Worker - combined, short-term - systemic, DNEL , RCR Worker - dermal, long-term - local: Exposure 1 mg/cm², DNEL , RCR

3. Exposure estimation (Health 3)

Process category	PROC11 Non industrial spraying
Assessment method	ECETOC TRA v2.0 Worker

Agrochemicals - Professional

Exposure	Worker - inhalation, long-term - local and systemic: Exposure 15.01 mg/m³, DNEL 25 mg/m³, RCR 0.6 Worker - dermal, long-term - systemic: Exposure 107.1 mg/kg/day, DNEL , RCR Worker - dermal, long-term - local: Exposure 5 mg/cm², DNEL , RCR

3. Exposure estimation (Health 4)

Process category	PROC13 Treatment of articles by dipping and pouring.
Assessment method	ECETOC TRA v2.0 Worker
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 10.01 mg/m³, DNEL 25 mg/m³, RCR 0.4 Worker - combined, short-term - systemic: Exposure 13.71 mg/kg/day, DNEL , RCR Worker - dermal, long-term - local: Exposure 2 mg/cm², DNEL , RCR

Exposure scenario
Laboratory reagents - Professional

Identification

Product name	Acetic Acid
REACH registration number	01-2119475328-30-XXXX
CAS number	64-19-7
EC number	200-580-7
EU index number	607-002-00-6
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Laboratory reagents - Professional
Process scope	Use of small quantities within laboratory settings, including material transfers and equipment cleaning.
Main sector	SU22 Professional uses

Environment

Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)

Worker

Process category	PROC10 Roller application or brushing PROC15 Use as laboratory reagent.

2. Conditions of use affecting exposure (Workers - Health 1)

Control of workers exposure

Process category	PROC15 Use as laboratory reagent.

Product characteristics

Physical state	Liquid, vapour pressure > 10 kPa at STP
Concentration details	Covers concentrations up to 100 %. Unless otherwise stated.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Laboratory reagents - Professional

Human factors not influenced by risk management

Potentially exposed body parts	Palm of one hand. Covers skin contact area up to 240 cm².

Other given operational conditions affecting workers exposure

Setting	Indoor use.
Temperature	Assumes activities are at room temperature.
Ventilation rate	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Handle in a fume cupboard or under extract ventilation. Provide extract ventilation to points where emissions occur. Efficiency of at least 80%

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Assumes a good basic standard of occupational hygiene is implemented.

2. Conditions of use affecting exposure (Workers - Health 2)

Control of workers exposure

Process category	PROC10 Roller application or brushing
	Vessel and container cleaning

Product characteristics

Physical state	Liquid, vapour pressure > 10 kPa at STP
Concentration details	Covers concentrations up to 100 %. Unless otherwise stated.

Frequency and duration of use

Application duration: 1 hour

Human factors not influenced by risk management

Potentially exposed body parts	Both hands. Covers skin contact area up to 960 cm².

Other given operational conditions affecting workers exposure

Setting	Indoor use.
Temperature	Assumes activities are at room temperature.
Ventilation rate	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Provide extract ventilation to points where emissions occur. Efficiency of at least %

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Assumes a good basic standard of occupational hygiene is implemented. Avoid carrying out activities involving exposure for more than 1 hour.

Risk management measures

Wear chemically-resistant gloves (tested to EN374) in combination with ‘basic’ employee training.

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Control of environmental exposure (Non-industrial)

Laboratory reagents - Professional

Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)
SPERC	ESVOC SPERC 8.17.v1

Product characteristics

Physical state	Liquid, vapour pressure > 10 kPa at STP
Concentration details	Covers concentrations up to 100 %. Unless otherwise stated.

Environmental factors not influenced by risk management measures

Dilution	Receiving surface water flow: 18000 m³/day

Risk management measures

STP type	Municipal STP.
STP details	Assumed domestic sewage treatment plant flow: 2000 m³/day

3. Exposure estimation (Environment 1)

Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)
Assessment method	Used EUSES model.
Environmental release	Water: 0.275 kg/day Air: 0 kg/day Soil: 0 kg/day
Environmental exposure	Fresh water: Exposure 0.09 mg/l, PNEC 3.058 mg/l, RCR 0.029 freshwater sediment: Exposure 0.333 mg/kg, PNEC 11.36 mg/kg, RCR 0.029 Marine water: Exposure 0.008 mg/l, PNEC 0.3058 mg/l, RCR 0.028 marine sediment: Exposure 0.028 mg/kg, PNEC 1.136 mg/kg, RCR 0.028 Effluent: Exposure 0.017 mg/l, PNEC 85 mg/l, RCR 0 Agriculture soil: Exposure 0.004 mg/kg, PNEC 0.478 mg/kg, RCR 0.01

3. Exposure estimation (Health 1)

Process category	PROC15 Use as laboratory reagent.
Assessment method	ECETOC TRA v2.0 Worker
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 5.004 mg/m³, DNEL 25 mg/m³, RCR 0.2 Worker - dermal, long-term - systemic: Exposure 0.034 mg/kg/day, DNEL , RCR Worker - dermal, long-term - local: Exposure 0.01 mg/cm², DNEL , RCR

3. Exposure estimation (Health 2)

Process category	PROC10 Roller application or brushing
Assessment method	ECETOC TRA v2.0 Worker
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 10.01 mg/m³, DNEL 25 mg/m³, RCR 0.4 Worker - dermal, long-term - systemic: Exposure 1.371 mg/kg/day, DNEL , RCR Worker - dermal, long-term - local: Exposure 0.1 mg/cm², DNEL , RCR

Exposure scenario
Water treatment chemicals - Professional

Identification

Product name	Acetic Acid
REACH registration number	01-2119475328-30-XXXX
CAS number	64-19-7
EC number	200-580-7
EU index number	607-002-00-6
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Water treatment chemicals - Professional
Process scope	Covers the use of the substance for the treatment of water in open and closed systems.
Main sector	SU22 Professional uses

Environment

Environmental release category	ERC8f Widespread use leading to inclusion into/onto article (outdoor)
SPERC	ESVOC SPERC 8.22b.v1

Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC13 Treatment of articles by dipping and pouring.

2. Conditions of use affecting exposure (Workers - Health 1)

Control of workers exposure

Water treatment chemicals - Professional

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition General exposures (closed systems) Storage

Product characteristics

Physical state	Liquid, vapour pressure > 10 kPa at STP
Concentration details	Covers concentrations up to 100 %. Unless otherwise stated.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	Palm of one hand. Covers skin contact area up to 240 cm².

Other given operational conditions affecting workers exposure

Setting	Indoor/outdoor use.
Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.
Ventilation rate	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or: Ensure operation is undertaken outdoors.

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Store substance within a closed system. Use in contained batch processes

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Assumes a good basic standard of occupational hygiene is implemented. Avoid carrying out activities involving exposure for more than 1 hour.

2. Conditions of use affecting exposure (Workers - Health 2)

Control of workers exposure

Process category	PROC4 Chemical production where opportunity for exposure arises General exposures (open systems)

Product characteristics

Physical state	Liquid, vapour pressure > 10 kPa at STP
Concentration details	Covers concentrations up to 100 %. Unless otherwise stated.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	Palm of both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting workers exposure

Setting	Outdoor use.
Temperature	Assumes activities are at room temperature.

Water treatment chemicals - Professional

Ventilation rate	Ensure operation is undertaken outdoors. , or: Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Assumes a good basic standard of occupational hygiene is implemented. Avoid carrying out activities involving exposure for more than 1 hour.

Risk management measures

Wear suitable gloves tested to EN374.

2. Conditions of use affecting exposure (Workers - Health 3)

Control of workers exposure

Process category	PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities Drum/batch transfers Equipment maintenance

Product characteristics

Physical state	Liquid, vapour pressure > 10 kPa at STP
Concentration details	Covers concentrations up to 100 %. Unless otherwise stated.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	Both hands. Covers skin contact area up to 960 cm².

Other given operational conditions affecting workers exposure

Setting	Indoor/outdoor use.
Temperature	Assumes activities are at room temperature.
Ventilation rate	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or: Ensure operation is undertaken outdoors.

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Use drum pumps. Drain or remove substance from equipment prior to break-in or maintenance. Provide extract ventilation to points where emissions occur. Efficiency of at least 90%

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Wear chemically-resistant gloves (tested to EN374) in combination with ‘basic’ employee training.
If above technical/organisational control measures are not feasible, then adopt following PPE: Wear a respirator conforming to EN140 with Type A/P2 filter or better.
Efficiency of at least 90%

2. Conditions of use affecting exposure (Workers - Health 4)

Control of workers exposure

Water treatment chemicals - Professional

Process category	PROC13 Treatment of articles by dipping and pouring.
	Pouring from small containers

Product characteristics

Physical state	Liquid, vapour pressure > 10 kPa at STP
Concentration details	Covers concentrations up to 100 %. Unless otherwise stated.

Frequency and duration of use

Application duration: 4 hours

Human factors not influenced by risk management

Potentially exposed body parts	Covers skin contact area up to 480 cm².

Other given operational conditions affecting workers exposure

Setting	Outdoor.
Temperature	Assumes activities are at room temperature.
Ventilation rate	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or: Ensure operation is undertaken outdoors.

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Provide extract ventilation to points where emissions occur. Efficiency of at least %

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Assumes a good basic standard of occupational hygiene is implemented. Avoid carrying out activities involving exposure for more than 4 hours.

Risk management measures

Wear chemically-resistant gloves (tested to EN374) in combination with ‘basic’ employee training.
If above technical/organisational control measures are not feasible, then adopt following PPE: Wear a respirator conforming to EN140 with Type A/P2 filter or better.
Efficiency of at least 90%

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Control of environmental exposure (Non-industrial)

Environmental release category	ERC8f Widespread use leading to inclusion into/onto article (outdoor)
SPERC	ESVOC SPERC 8.22b.v1

Product characteristics

Physical state	Liquid, vapour pressure > 10 kPa at STP
Concentration details	Covers concentrations up to 100 %. Unless otherwise stated.

Environmental factors not influenced by risk management measures

Dilution	Receiving surface water flow: 18000 m³/day

Risk management measures

STP type	Municipal STP.
STP details	Assumed domestic sewage treatment plant flow: 2000 m³/day

Water treatment chemicals - Professional

3. Exposure estimation (Environment 1)

Environmental release category	ERC8f Widespread use leading to inclusion into/onto article (outdoor)
Assessment method	Used EUSES model.
Environmental release	Water: 3.96 kg/day Air: 0 kg/day Soil: 0 kg/day
Environmental exposure	Fresh water: Exposure 0.113 mg/l, PNEC 3.058 mg/l, RCR 0.037 freshwater sediment: Exposure 0.42 mg/kg, PNEC 11.36 mg/kg, RCR 0.037 Marine water: Exposure 0.011 mg/l, PNEC 0.3058 mg/l, RCR 0.035 marine sediment: Exposure 0.04 mg/kg, PNEC 1.136 mg/kg, RCR 0.035 Effluent: Exposure 0.25 mg/l, PNEC 85 mg/l, RCR 0.003 Agriculture soil: Exposure 0.005 mg/kg, PNEC 0.478 mg/kg, RCR 0.011

3. Exposure estimation (Health 1)

Process category	PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
Assessment method	ECETOC TRA v2.0 Worker
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 8.758 mg/m³, DNEL 25 mg/m³, RCR 0.35 Worker - dermal, long-term - systemic: Exposure 0.343 mg/kg, DNEL , RCR Worker - dermal, long-term - local: Exposure 0.1 mg/cm², DNEL , RCR

3. Exposure estimation (Health 2)

Process category	PROC4 Chemical production where opportunity for exposure arises
Assessment method	ECETOC TRA v2.0 Worker
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 17.52 mg/m³, DNEL 25 mg/m³, RCR 0.701 Worker - combined, short-term - systemic: Exposure 6.857 mg/kg, DNEL , RCR Worker - dermal, long-term - local: Exposure 1 mg/cm², DNEL , RCR

3. Exposure estimation (Health 3)

Process category	PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
Assessment method	ECETOC TRA v2.0 Worker
Exposure	Worker - inhalation, long-term - local and systemic: Exposure 17.52 mg/m³, DNEL 25 mg/m³, RCR 0.701 Worker - dermal, long-term - systemic: Exposure 13.71 mg/kg/day, DNEL , RCR Worker - dermal, long-term - local: Exposure 1 mg/cm², DNEL , RCR

3. Exposure estimation (Health 4)

Process category	PROC13 Treatment of articles by dipping and pouring.
Assessment method	ECETOC TRA v2.0 Worker

Water treatment chemicals - Professional

Exposure	Worker - inhalation, long-term - local and systemic: Exposure 10.51 mg/m³, DNEL 25 mg/m³, RCR 0.42 Worker - dermal, long-term - systemic: Exposure 13.71 mg/kg/day, DNEL , RCR Worker - dermal, long-term - local: Exposure 2 %, DNEL , RCR

Exposure scenario
Manufacture of Substance

Identification

Product name	Acetic Acid
REACH registration number	01-2119475328-30-XXXX
CAS number	64-19-7
EC number	200-580-7
EU index number	607-002-00-6
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Manufacture of Substance
Process scope	Manufacture of the substance or use as a process chemical or extraction agent. Includes recycling/recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities. Use of substance as an intermediate (not related to Strictly Controlled Conditions). Includes recycling/recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).
Main sector	SU3 Industrial uses
Sector of use	SU8 Manufacture of bulk, large-scale chemicals (including petroleum products) SU9 Manufacture of fine chemicals

Environment

Environmental release category	ERC1 Manufacture of the substance ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article) ERC6a Use of intermediate

Worker

Manufacture of Substance

Process category

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
PROC4 Chemical production where opportunity for exposure arises
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
PROC15 Use as laboratory reagent.

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Not regarded as dangerous for the environment. No exposure scenario required.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid, vapour pressure > 10 kPa at STP

Concentration details Covers concentrations up to 100 %. Unless otherwise stated.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Setting Indoor/outdoor use.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Store substance within a closed system. Drain or remove substance from equipment prior to break-in or maintenance. Ensure material transfers are under containment or extract ventilation. Ensure samples are obtained under containment or extract ventilation.
PROC15 Use as laboratory reagent. Handle in a fume cupboard or under extract ventilation.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Assumes a good basic standard of occupational hygiene is implemented.

Risk management measures

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

3. Exposure estimation (Environment 1)

No exposure assessment presented for the environment.

3. Exposure estimation (Health 1)

Manufacture of Substance

Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.