SOLID STRAW

BRAND: MARMOLIT/ SUPERMASTICS

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product Identifier

Mixture identification:

Trade name: **SOLID STRAW**

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

Resin used in building

1.3. Details of the supplier of the safety data sheet

Company:

B-CHEM

Via Enzo Ferrari, 25 - Zona Industriale "A"

62012 Civitanova Marche (MC) - ITALY

Tel: + 39 0733 801444

Fax: + 39 0733 801062

Competent person responsible for the safety data sheet e-mail: annalisa@b-chem.net

1.4. Emergency telephone number

Phone: + 39 0733 801444 (Office hours: 8:30-13:00; 14:00-17:30)

SECTION 2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification according to Directive 1999/45/EC and following amendments thereof:

R10 Flammable

R20 Harmful by inhalation

R36/37/38 Irritating to eyes, respiratory system and skin

R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation

Adverse physicochemical, human health and environmental effects: no other hazards.

2.2. Label elements

Symbols:

Harmful

R-Phrases:

R10 Flammable

R20 Harmful by inhalation

R36/37/38 Irritating to eyes, respiratory system and skin

R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation

S-Phrases:

S9 Keep container in a well-ventilated place.

S23 Do not breathe gas/fumes/vapour/spray.

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S36/37 Wear suitable protective clothing and gloves

S43 In case of fire use: foam, CO_2, chemical powder, sand. Use spray water to cool down packaging. Never use direct water jets on fire.

S60 This material and its containers must be disposed of as hazardous waste.

Special provisions: Contains styrene

2.3. Other hazards

vPvB Substances: none
PBT Substances: none

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

N.A.

3.2. Mixtures

Mixture of resin, styrene, and other non-hazardous constituents.
Hazardous components within the meaning of Directive 67/548/EEC and CLP Regulation and related classification:

10% - 20% Styrene
REACH registration number: 01-2119457861-32-XXXX, Index number: 601-026-00-0
CAS: 100-42-5, EC: 202-851-5
Xn,Xi; R10, R20, R36/37/38, R48/20, R65


2.6/3 Flam. Liq. 3 H226


3.1/4/Inhal Acute Tox. 4 H332


3.3/2 Eye Irrit. 2 H319


3.8/3 STOT SE 3 H335


3.2/2 Skin Irrit. 2 H315


3.9/1 STOT RE 1 H372


3.10/1 Asp. Tox. 1 H304

0.1% - 0.5% 1,1'-(p-tolylimino)dipropan-2-ol
CAS: 38668-48-3, EC: 254-075-1
T,Xi; R25, R41, R52/53


3.1/2/Oral Acute Tox. 2 H300


3.3/1 Eye Dam. 1 H318

4.1/C3 Aquatic Chronic 3 H412

Additional information: for the full text of the R-phrases and H statements see section 16.

SECTION 4. FIRST AID MEASURES

4.1. Description of first aid measures

In case of skin contact:

Flush away with water and rinse. Change clothes if necessary. If irritation persists or tissue damage occurs, consult a physician.

In case of eyes contact:

Wash with running water for several minutes holding the eyelids open. If symptoms persist, consult a physician.

In case of Ingestion:

Do not induce vomiting if not authorized by a physician, show the SDS. Never give anything by mouth to an unconscious person. Consult a physician immediately.

In case of Inhalation:

Remove from the danger zone in a well ventilated area. Consult a physician immediately.

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

Symptoms of poisoning appear mostly after several hours. May cause drowsiness or dizziness. Inhalation: May cause irritation of respiratory tract. Skin contact: Irritating to skin. Eye contact: Irritating to eyes. Ingestion: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. Disorientation. Pneumonia.

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

No data available.

SECTION 5. FIRE-FIGHTING MEASURES

The product is flammable, pay close attention. The product is not explosive, but formation of explosive vapour/air mixtures is possible. Avoid formation of vapours. Ensure electrical continuity with a suitable network of ground to avoid the accumulation of electrostatic dicharges.

5.1. Extinguishing media

Suitable extinguishing media:

Carbon dioxide (CO_2).

Chemical powder.

Sand.

Fight larger fires with water spray or alcohol resistant foam.

Extinguishing media which must not be used for safety reasons:

Direct water jets on fire.

5.2. Special hazards arising from the substance or mixture

Carbon monoxide.

5.3. Advice for fire-fighters

In case of fire do not breathe fumes When extinguishing fires, use breathing apparatus with an independent source of air. Keep away unauthorized people from danger area. Cool with spray water the packaging exposed to fire.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Wear protection gloves, clothes, glasses, boots and respiratory apparatus. Refer to protective measures listed in sections 7 and 8. Keep away from flames and ignition sources. Don't smoke. Keep away form the dangerous area not authorized people.

6.2. Environmental precautions

Do not empty into drains. If the product contaminates lakes, rivers or sewages, inform appropriate authorities in accordance with local regulations.

6.3. Methods and material for containment and cleaning up

In case of solid product, avoid the dust release. In case of liquid product, limit and adsorb the spill with inert adsorbing material (for example sand, vermiculite). Put the resultant material in adeguate packaging and send to an authorized plant for the disposal. Collect the spread product, and then wash with water area and materials. Recove the water used and send to an authorized plant for the disposal.

6.4. Reference to other sections

See also section 8 and 13.

SECTION 7. HANDLING AND STORAGE

7.1. Precautions for safe handling

Use with good manufacturing practice and with correct protection devices Avoid the contact and vapours and/or dust inhalation. See the SDS paragraph 8.

7.2. Conditions for safe storage, including any incompatibilities

Store in a cool, dry place. Avoid exposure to direct sunlight. Keep away from fire, sparks and ignition sources. Make sure that ventilation is adequate. Keep away from materials which can lead to reaction (see section 10).

Storage class: 3

Storage class (TRGS 510): 3

7.3. Specific end use(s)

Uses in coatings.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Substance	***Reference***	***Value***
Styrene (CAS: 100-42-5)	NIOSH REL	TLV-TWA: 50 ppm - 215 mg/m^3
	NIOSH REL	TLV-STEL: 100 ppm - 425 mg/m^3
	OSHA PEL	TLV-TWA: 100 ppm
	OSHA PEL	TLV-STEL: 200 ppm
	ACGIH 1996	TLV-TWA: 20 ppm - 85 mg/m^3
	ACGIH 1996	TLV-STEL: 40 ppm - 170 mg/m^3
Parameter	***Route of exposure***	***Value***
DNEL	Systemic effects_Short-term_Inhalation_Workers	289 mg/m^3
	Systemic effects_Long-term_Inhalation_Workers	85 mg/m^3
	Local effects_Short-term_Inhalation_Workers	306 mg/m^3
	Systemic effects_Short-term_Inhalation_Population	174.25 mg/m^3
	Systemic effects_Long-term_Inhalation_Population	10.6 mg/m^3
	Local effects_Short-term_Inhalation_Population	182.75 mg/m^3
	Systemic effects_Long-term_Oral_Population	2.1 mg/kg
	Systemic effects_Long-term_Dermal _Workers	406 mg/kg
	Systemic effects_Long-term_Dermal_Population	343 mg/kg
Parameter	***Compartment***	***Value***
PNEC	Freshwater	0.028 mg/l
	Marine water	0.0028 mg/l
	Intermittent releases	0.04 mg/l
	Sediment (freshwater)	0.614 mg/kg
	Sediment (marine water)	0.0614 mg/kg
	Soil	0.2 mg/kg

	Sewage Treatment Plants	5 mg/l

8.2. Exposure controls

General protective and hygiene measures:

Do not eat or drink during work - no smoking. Use hand, eyes and respiratory apparatura protection devices. The protection devices supplier must ensure those devices are suitable for the product managing.

Eye protection:

Safety glasses with side shields (EN 166).

Protection for hands:

Wear rubber gloves approved under standard EN374.

Respiratory protection:

Use filter type A (contrast vapors of organic compounds) according to EN 141.

Additional information about engineering measures:

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL (=Occupational Exposure Limit) , suitable respiratory protection must be worn.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance and colour:	Solid, straw
Odour:	Aromatic
Odour threshold:	N.D.
pH:	N.D.
Melting point:	-31 °C (Styrene)
Initial boiling point:	145 °C (Styrene)
Solid/gas flammability:	N.A.
Lower explosive limit:	1.1 % Vol (Styrene)
Upper explosive limit:	6.1 % Vol (Styrene)
Vapour density:	3.6 (Styrene)
Flash point:	30 °C
Evaporation rate:	N.D.
Vapour pressure:	6.67 hPa (Styrene)
Relative density:	0.906 g/cm^3 (Styrene)
Solubility in water:	Insoluble
Lipid solubility:	N.D.
Partition coefficient (n-octanol/water):	2.96 (Styrene)
Auto-ignition temperature:	490 °C (Styrene)
Decomposition temperature:	N.D.
Viscosity:	> 2,600 mPa*s
Explosive properties:	Not explosive
Oxidizing properties:	N.D.

9.2. Other information

Dry residue at 105 °C:	84.30 %
Acid value:	6.0 mg KOH/g
VOC:	N.D.

SECTION 10. STABILITY AND REACTIVITY

10.1. Reactivity

Stable under normal conditions.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Stable under normal conditions.

10.4. Conditions to avoid

Keep away from fire, sparks and ignition sources.

10.5. Incompatible materials

Strong oxidizing agents. Peroxides. Contaminants and catalysts for vinyl polymers. Alkali metal-graphite compounds. Aluminum chloride. Strong acids. Strong alkalies. Copper. Copper alloys. Rubber. Brass.

10.6. Hazardous decomposition products

Carbon monoxide.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Toxicological information of the mixture:

N.D.

Toxicological information of the main substances found in the mixture:

Styrene (CAS: 100-42-5)

LC_{50} (inhalation, rat): 11.8 mg/l/4h
LD_{50} (oral, rat): approx. 5,000 mg/kg
LD_{50} (dermal, rat): >2,000 mg/kg (OECD 402)

Subacute /chronic toxicity:

Styrene is of low acute toxicity when administered orally. Ingestion may cause discomfort and irritation of the gastrointestinal tract, effects on lungs and kidneys, and CNS depression (fatigue, dizziness and possibly loss of concentration, with collapse, coma and death in cases of severe overexposure) Aspiration into the lung may cause fatal chemical pneumonitis. May increase the sensitivity of the heart to endogenous catecholamines leading to potentially fatal cardiac sensitization.

Cancerogenic and mutagenic effects, risks to reproduction:

Styrene does possess some genotoxic potential in vitro presumably reflecting conversion to styrene oxide. There is no convincing evidence from available animal and human data that styrene possesses significant mutagenic/clastogenic potential in vivo.

Chronic inhalation resulted in hyperplasia and fibrosis and an increased incidence of late onset lung tumors in mice, which are believe to have arisen through a non-genotoxic mechanism. Tumor incidence in rats was unaffected after chronic inhalation exposure. there is no convincing evidence that styrene possesses significant carcinogenic potential in humans. Results from reproductive toxicity studies in animals exposed via drinking water or inhalation have shown no evidence of selective toxicity to the testis or ovary or adverse effects on fertility.

Results from animal studies demonstrate that styrene is not a teratogen, nor is it fetotoxic at sub-maternally-toxic treatment levels. No selective effects on nervous system development have been reported. Some indication of developmental delay was observed in pups from dams exposed to high dose levels (500 ppm) however these findings were attributed to decreased pup body weight rather than a selective effect on the offspring.

SECTION 12. ECOLOGICAL INFORMATION

Adopt good working practices, so that the product is not released into the environment.

12.1. Toxicity

Styrene (CAS: 100-42-5)

EC_{50}	*Algae:* Pseudokirchneriella subcapitata: 4.9 mg/l (72h) *Crustacai:* Daphnia magna: 4.7 mg/l (48h)

LC_{50}	*Fishes:* Pimephales promelas: 4.02 mg/l (96h)

12.2. Persistence and degradability

Readily biodegradable (Styrene).

12.3. Bioaccumulative potential

Significant bioaccumulation potential is not to be expected (Styrene).

12.4. Mobility in soil

Styrene has very high potential for mobility.

12.5. Results of PBT and vPvB assessment

PBT Substances: None

vPvB Substances: None

12.6. Other adverse effects

There are no data available on the product itself.

12.7. Additional information

Danger to drinking water if even small quantities leak into the ground product. Do not empty the product into drains and waters without primary treatment and do not store on public depositories.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Pass on to an appropriate incinerating plant or depository or recycling. Contaminated packaging must be emptied of all residues and, following appropriate cleaning, may be sent to a recycling plant. Uncleaned packaging must be disposed of in the same manner as the medium.

SECTION 14. TRANSPORT INFORMATION

	Land transport (ADR/RID/ADN) (**)	Maritime transport (IMDG Code) (**)	Air transport (ICAO T.I./IATA) (**)
14.1 UN Number	1866	1866	1866
14.2 UN proper shipping name	RESIN SOLUTION	RESIN SOLUTION	RESIN SOLUTION
14.3 Transport hazard class	3	3	3
Hazard label	3	3	3
14.4 Packaging group	III	III	III
14.5 Enviromental hazard	Not classified	Not classified	Not classified
14.6 Special precautions for user	(*)	EmS : F-E, S-E (*)	(*)
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable	Not applicable	Not applicable

(*) “Transport, including loading and unloading, must be carried out by people who received the necessary training required by the modal regulations concerning the transport of dangerous goods.”

(**) *Transport additional information*: when the product UN 1866 "Resin solution" is transported packaged in common with an organic peroxide to be used as hardener (catalyst), should be classified UN 3269 "Polyester resin kit" in accordance with special provision 236 of the ADR-RID-ADN and ICAO TI editions 2013 and the IMDG Code 36-12 currently in force.

SECTION 15. REGULATORY INFORMATION

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

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer:
Not listed.
Regulation (EC) No 850/2004 on Persistent Organic Pollutants, Annex I:
Not listed.
Regulation (EC) No 689/2008 concerning the export and import of dangerous chemicals, Annex I, Part 1:
Not listed.
Regulation (EC) No 689/2008 concerning the export and import of dangerous chemicals, Annex I, Part 2:
Not listed.
Regulation (EC) No 689/2008 concerning the export and import of dangerous chemicals, Annex I, Part 3:
Not listed.
Regulation (EC) No 689/2008 concerning the export and import of dangerous chemicals, Annex V:
Not listed.
Regulation (EC) No 1907/2006, Article 59 (1) [candidate list]:
Not listed.

15.2. Chemical safety assessment: a chemical safety assessment hasn't been carried out for the mixture; are attached Styrene exposure scenarios (relevant scenarios for the product n° 13,14 and 17)

SECTION 16. OTHER INFORMATION

Date: 31/01/2014
Type of revision: all section
Comply with Regulation (EU) n. 453/2010, Annex I
This document was prepared by a competent person who has received appropriate training.

Acronyms and abbreviations

ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road.
ACGIH:	American Conference of Industrial Governmental Hygienists.
CAS:	Chemical Abstracts Service (division of the American Chemical Society).
CLP:	Classification, Labeling, Packaging.
DNEL:	Derived No Effect Level.
GHS:	Globally Harmonized System of Classification and Labeling of Chemicals.
IATA:	International Air Transport Association.
IATA-DGR:	Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
ICAO:	International Civil Aviation Organization.
ICAO-TI:	Technical Instructions by the "International Civil Aviation Organization" (ICAO).
IMDG:	International Maritime Code for Dangerous Goods.
LC_{50}:	Lethal concentration, for 50 percent of test population.
LD_{50}:	Lethal dose, for 50 percent of test population.
MARPOL 73/78:	International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978.
NIOSH-REL:	National Institute for Occupational Safety and Health (USA) - Recommended

Exposure Limits.

OSHA-PEL: Occupational Safety & Health Administration (USA) - Permissible Exposure Limits.
PNEC: Predicted No Effect Concentration.
RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.
STEL: Short Term Exposure limit.
STOT: Specific Target Organ Toxicity.
TLV: Threshold Limit Value.
TLV/TWA: Threshold Limit Value for the Time Weighted Average 8 hour day.

Remarks:
N.A. = not applicable
N.D. = not determined

Safety data sheet complying with:
- Directive 1999/45/EC;
- Decision 2000/532/EC;
- Directive 67/548/EEC;
- Regulation (EC) n. 1907/2006 (REACH);
- Regulation (EC) n. 1272/2008 (CLP);
- Regulation (EC) n. 790/2009;
- Regulation (EU) n. 453/2010.

Legislation and reference sources
- Directive 67/548/EEC and its amendments (Classification and labeling of dangerous substances);
- Directive 1999/45/EC and its amendments (Classification and labeling of dangerous preparations);
- Regulation (EC) n. 1272/2008 (Classification, labeling and packaging of substances and mixtures);
- ADR (European Agreement concerning the International Carriage of Dangerous Goods by Road);
- International Maritime Dangerous Goods Code (IMDG Code);
- International Air Transport Association (IATA);
- ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities;
- SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold.

Full text of phrases referred to in Section 3:

R10 Flammable.
R20 Harmful by inhalation.
R25 Toxic if swallowed.
R36/37/38 Irritating to eyes, respiratory system and skin.
R41 Risk of serious damage to eyes.
R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R65 Harmful: may cause lung damage if swallowed.

H226 Flammable liquid and vapour.
H300 Fatal if swallowed.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.

H335 May cause respiratory irritation.
H372 Causes damage to organs through prolonged or repeated exposure.
H412 Harmful to aquatic life with long lasting effects.

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and shall not establish a legally valid contractual relationship.
It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

STYRENE EXPOSURE SCENARIO

Print Date 20.01.2014

No.	Short title	Main User Group (SU)	Sector of Use (SU)	Product Category (PC)	Process Category (PROC)	Environmental Release Category (ERC)	Article Category (AC)	Specified
1	Manufacture of substance	3	8	NA	1, 2, 8a, 8b, 15	1	NA	ES26
2	Formulation & (re)packing of substances and mixtures	3	10	NA	1, 2, 3, 4, 5, 8a, 8b, 9, 15	2	NA	ES13825
3	Continuous mass polymerisation of Polystyrene	3	12	NA	2, 8a, 8b, 9, 14, 15	6c	NA	ES114
4	Batch suspension polymerisation of Polystyrene	3	12	NA	2, 3, 8a, 8b, 9, 14, 15	6c	NA	ES121
5	Production of expandable Polystyrene	3	12	NA	2, 3, 8a, 8b, 9, 14, 15	6c	NA	ES124
6	Production of styrenic copolymers	3	12	NA	2, 3, 8a, 8b, 9, 15	6c	NA	ES126
7	Production of styrene butadiene rubber (SBR)	3	11	NA	2, 3, 8a, 8b, 9, 15	6c	NA	ES174
8	Production of styrene butadiene latex (SBL)	3	11	NA	2, 3, 8a, 8b, 9, 15	6c	NA	ES181
9	Production of styrene isoprene copolymers	3	11, 12	NA	2, 3, 8a, 8b, 9, 15	6c	NA	ES187
10	Production of other styrene based polymeric dispersions	3	12	NA	2, 3, 8a, 8b, 9, 15	6c	NA	ES202
11	Polymer production	3	12	NA	2, 3, 8a, 8b, 9, 15	6c	NA	ES210
12	Production of resins	3	12	NA	1, 3, 4, 5, 8a, 8b, 9, 15	2	NA	ES29
13	Use in liquid resins	21	NA	9a	NA	8a, 8d	NA	ES618
14	Use in resin pastes	21	NA	9b	NA	8a, 8d	NA	ES619
15	Polymer processing	3	12	NA	3, 5, 7, 8a, 10, 13, 14, 15	6d	NA	ES41
16	Use in fibre-reinforced plastic applications	22	12	NA	3, 4, 5, 8a, 10, 11	8c	NA	ES49
17	Uses in coatings	3	10	NA	1, 2, 3, 4, 5, 7, 8a, 8b, 10, 13, 14, 15	5	NA	ES13827

STYRENE EXPOSURE SCENARIO

Print Date 20.01.2014

1. Short title of Exposure Scenario 1: Manufacture of substance

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	SU8: Manufacture of bulk, large scale chemicals (including petroleum products)
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC15: Use as laboratory reagent
Environmental Release Categories	ERC1: Manufacture of substances

2.1 Contributing scenario controlling environmental exposure for: ERC1

No exposure assessment presented for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC8a, PROC8b, PROC15

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
	Frequency of use	< 1 hours/day(PROC8b)
Other operational conditions affecting workers exposure	Assumes use at not more than 20°C above ambient temperature, unless stated differently.	
Technical conditions and measures to control dispersion from source towards the worker	Clean up contamination/spills as soon as they occur.	
	General exposures (closed systems) with occasional controlled exposure	Handle substance within a closed system.(PROC2)
	Additivation and stabilisation	Ensure material transfers are under containment or extract ventilation.(PROC8b)
	Process sampling	Use a sampling system designed to control exposure.(PROC8a)
	Laboratory activities	No specific measures identified.(PROC15)
	Material transfers	Transfer via enclosed lines.(PROC1)
	Additivation and stabilisation	Use in semi-automated and predominantly enclosed filling lines.(PROC8b)
	Dedicated facility Road tanker/rail car loading marine vessel/barge (un)loading	Clear transfer lines prior to de-coupling. Ensure operation is undertaken outdoors.(PROC8b)

	Equipment maintenance	Drain down system prior to equipment opening or maintenance. Retain drain downs in sealed storage pending disposal or for subsequent recycle.(PROC8b)
	Storage	Store substance within a closed system.(PROC1)
Organisational measures to prevent /limit releases, dispersion and exposure	Provide basic employee training to prevent /minimise exposures and to report any skin problems that may develop.	
	Dedicated facility Road tanker/rail car loading marine vessel/barge (un)loading	Operate activity away from sources of substance emission or release.(PROC8b)
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands. Avoid direct skin contact with product. Wear suitable gloves tested to EN374 during the activities where the skin contact is possible. Wash off any skin contamination immediately.	

3. Exposure estimation and reference to its source

Workers

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. Predicted exposures are not expected to exceed the applicable exposure limits when the operational conditions/risk management measures given in section 2 are implemented.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

STYRENE EXPOSURE SCENARIO

Print Date 20.01.2014

1. Short title of Exposure Scenario 2: Formulation & (re)packing of substances and mixtures		
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites	
Sectors of end-use	SU 10: Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)	
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC15: Use as laboratory reagent	
Environmental Release Categories	ERC2: Formulation of preparations	
2.1 Contributing scenario controlling environmental exposure for: ERC2		
No exposure assessment presented for the environment.		
2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC15		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	0,5 - 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
	Exposure duration per day	15 min - 1 h(PROC8b)
Other operational conditions affecting workers exposure	Assumes use at not more than 20°C above ambient temperature, unless stated differently.	
	Limit the substance content in the mixture to 5 %.(PROC8b)	
Technical conditions and measures to control dispersion	Use in semi-automated and predominantly enclosed filling lines. Provide a good standard of general ventilation. Natural ventilation is from doors,	

from source towards the worker	windows etc. Controlled ventilation means air is supplied or removed by a powered fan. (Efficiency: 30 %)(PROC1)
	Handle substance within a closed system.(PROC2)
	Use in semi-automated and predominantly enclosed filling lines. Provide extract ventilation to points where emissions occur. provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). (Efficiency: 30 %)(PROC3, PROC4)
	Provide extraction ventilation at points where emissions occur. Put lids on containers immediately after use.(PROC5)
	Avoid dip sampling. provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). (Efficiency: 30 %)(PROC4)
	Carry out in a vented booth or extracted enclosure.(PROC15)
	Fill containers/cans at dedicated filling points supplied with local extract ventilation.(PROC9)
	Drain down and flush system prior to equipment opening or maintenance. Apply vessel entry procedures including use of forced supplied air.(PROC3)
	Avoid carrying out operation for more than 1 hour. Drain down system prior to equipment opening or maintenance. Drain or remove substance from equipment prior to break-in or maintenance. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. (Efficiency: 30 %)(PROC8a)
	Avoid carrying out operation for more than 1 hour. Clear transfer lines prior to de-coupling.(PROC8b)
Organisational measures to prevent /limit releases, dispersion and exposure	Provide basic employee training to prevent/minimize exposures
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN374.

3. Exposure estimation and reference to its source

Workers

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. Predicted exposures are not expected to exceed the applicable exposure limits when the operational conditions/risk management measures given in section 2 are implemented.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

STYRENE EXPOSURE SCENARIO

Print Date 20.01.2014

1. Short title of Exposure Scenario 3: Continuous mass polymerisation of Polystyrene	
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	SU12: Manufacture of plastics products, including compounding and conversion
Process categories	PROC2: Use in closed, continuous process with occasional controlled exposure PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelettisation PROC15: Use as laboratory reagent
Environmental Release Categories	ERC6c: Industrial use of monomers for manufacture of thermoplastics

2.1 Contributing scenario controlling environmental exposure for: ERC6c

No exposure assessment presented for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC2, PROC8a, PROC8b, PROC9, PROC14, PROC15

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	0,5 - 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
	Frequency of use	< 1 hours/day(PROC8b)
Other operational conditions affecting workers exposure	Assumes use at not more than 20°C above ambient temperature, unless stated differently.	
	Limit the substance content in the mixture to 5 %.(PROC9, PROC14)	
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system.(PROC2)	
	Use a sampling system designed to control exposure.(PROC8a)	
	Clear transfer lines prior to de-coupling.(PROC8b)	
	No specific measures identified.(PROC15)	
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.	

3. Exposure estimation and reference to its source

Workers

ECETOC TRA Version 2 with modifications has been used. Predicted exposures are not expected to exceed the applicable exposure limits when the operational conditions/risk management measures given in section 2 are implemented.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

STYRENE EXPOSURE SCENARIO

Print Date 20.01.2014

1. Short title of Exposure Scenario 4: Batch suspension polymerisation of Polystyrene

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	SU12: Manufacture of plastics products, including compounding and conversion
Process categories	PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelettisation PROC15: Use as laboratory reagent
Environmental Release Categories	ERC6c: Industrial use of monomers for manufacture of thermoplastics

2.1 Contributing scenario controlling environmental exposure for: ERC6c

No exposure assessment presented for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC2, PROC3, PROC8a, PROC8b, PROC9, PROC14, PROC15

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	0,5 - 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
	Frequency of use	< 1 hours/day(PROC8b)
Other operational conditions affecting workers exposure	Assumes use at not more than 20°C above ambient temperature, unless stated differently.	
	Limit the substance content in the mixture to 5 %.(PROC9, PROC14)	
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system.(PROC2)	
	provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC3)	
	Use a sampling system designed to control exposure.(PROC8a)	
	Clear transfer lines prior to de-coupling.(PROC8b)	
	No specific measures identified.(PROC15)	

Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.

3. Exposure estimation and reference to its source

Workers

ECETOC TRA Version 2 with modifications has been used. Predicted exposures are not expected to exceed the applicable exposure limits when the operational conditions/risk management measures given in section 2 are implemented.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

STYRENE EXPOSURE SCENARIO

Print Date 20.01.2014

1. Short title of Exposure Scenario 5: Production of expandable Polystyrene

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	SU12: Manufacture of plastics products, including compounding and conversion
Process categories	PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelettisation PROC15: Use as laboratory reagent
Environmental Release Categories	ERC6c: Industrial use of monomers for manufacture of thermoplastics

2.1 Contributing scenario controlling environmental exposure for: ERC6c

No exposure assessment presented for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC2, PROC3, PROC8a, PROC8b, PROC9, PROC14, PROC15

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	0,5 - 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
	Frequency of use	< 1 hours/day(PROC8b)
Other operational conditions affecting workers exposure	Assumes use at not more than 20°C above ambient temperature, unless stated differently.	
	Limit the substance content in the mixture to 5 %.(PROC9, PROC14)	
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system.(PROC2)	
	provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC3)	
	Use a sampling system designed to control exposure.(PROC8a)	
	Clear transfer lines prior to de-coupling.(PROC8b)	
	No specific measures identified.(PROC15)	

Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.

3. Exposure estimation and reference to its source

Workers

ECETOC TRA Version 2 with modifications has been used. Predicted exposures are not expected to exceed the applicable exposure limits when the operational conditions/risk management measures given in section 2 are implemented.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

STYRENE EXPOSURE SCENARIO

Print Date 20.01.2014

1. Short title of Exposure Scenario 6: Production of styrenic copolymers

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	SU12: Manufacture of plastics products, including compounding and conversion
Process categories	PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC15: Use as laboratory reagent
Environmental Release Categories	ERC6c: Industrial use of monomers for manufacture of thermoplastics

2.1 Contributing scenario controlling environmental exposure for: ERC6c

No exposure assessment presented for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC2, PROC3, PROC8a, PROC8b, PROC9, PROC15

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	0,5 - 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
	Frequency of use	< 1 hours/day(PROC8b)
Other operational conditions affecting workers exposure	Assumes use at not more than 20°C above ambient temperature, unless stated differently.	
	Limit the substance content in the mixture to 5 %.(PROC9)	
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system.(PROC2)	
	provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC3)	
	Use a sampling system designed to control exposure.(PROC8a)	
	Clear transfer lines prior to de-coupling.(PROC8b)	
	No specific measures identified.(PROC15)	
Conditions and measures related to personal protection, hygiene	Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.	

and health evaluation

3. Exposure estimation and reference to its source

Workers

ECETOC TRA Version 2 with modifications has been used. Predicted exposures are not expected to exceed the applicable exposure limits when the operational conditions/risk management measures given in section 2 are implemented.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

STYRENE EXPOSURE SCENARIO

Print Date 20.01.2014

1. Short title of Exposure Scenario 7: Production of styrene butadiene rubber (SBR)	
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	SU11: Manufacture of rubber products
Process categories	PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC15: Use as laboratory reagent
Environmental Release Categories	ERC6c: Industrial use of monomers for manufacture of thermoplastics

2.1 Contributing scenario controlling environmental exposure for: ERC6c
No exposure assessment presented for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC2, PROC3, PROC8a, PROC8b, PROC9, PROC15		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	0,5 - 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
	Frequency of use	< 1 hours/day(PROC8b)
Other operational conditions affecting workers exposure	Assumes use at not more than 20°C above ambient temperature, unless stated differently.	
	Limit the substance content in the mixture to 5 %.(PROC9)	
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system.(PROC2)	
	provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC3)	
	Use a sampling system designed to control exposure.(PROC8a)	
	Clear transfer lines prior to de-coupling.(PROC8b)	
	No specific measures identified.(PROC15)	
Conditions and measures related to personal protection, hygiene	Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.	

and health evaluation

3. Exposure estimation and reference to its source

Workers

ECETOC TRA Version 2 with modifications has been used. Predicted exposures are not expected to exceed the applicable exposure limits when the operational conditions/risk management measures given in section 2 are implemented.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

STYRENE EXPOSURE SCENARIO

Print Date 20.01.2014

1. Short title of Exposure Scenario 8: Production of styrene butadiene latex (SBL)	
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	SU11: Manufacture of rubber products
Process categories	PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC15: Use as laboratory reagent
Environmental Release Categories	ERC6c: Industrial use of monomers for manufacture of thermoplastics

2.1 Contributing scenario controlling environmental exposure for: ERC6c
No exposure assessment presented for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC2, PROC3, PROC8a, PROC8b, PROC9, PROC15		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	0,5 - 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
	Frequency of use	< 1 hours/day(PROC8b)
Other operational conditions affecting workers exposure	Assumes use at not more than 20°C above ambient temperature, unless stated differently.	
	Limit the substance content in the mixture to 5 %.(PROC9)	
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system.(PROC2)	
	provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC3)	
	Use a sampling system designed to control exposure.(PROC8a)	
	Clear transfer lines prior to de-coupling.(PROC8b)	
	No specific measures identified.(PROC15)	
Conditions and measures related to personal protection, hygiene	Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.	

and health evaluation

3. Exposure estimation and reference to its source

Workers

ECETOC TRA Version 2 with modifications has been used. Predicted exposures are not expected to exceed the applicable exposure limits when the operational conditions/risk management measures given in section 2 are implemented.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

STYRENE EXPOSURE SCENARIO

Print Date 20.01.2014

1. Short title of Exposure Scenario 9: Production of styrene isoprene copolymers

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	SU11: Manufacture of rubber products SU12: Manufacture of plastics products, including compounding and conversion
Process categories	PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC15: Use as laboratory reagent
Environmental Release Categories	ERC6c: Industrial use of monomers for manufacture of thermoplastics

2.1 Contributing scenario controlling environmental exposure for: ERC6c

No exposure assessment presented for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC2, PROC3, PROC8a, PROC8b, PROC9, PROC15

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	0,5 - 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
	Frequency of use	< 1 hours/day(PROC8b)
Other operational conditions affecting workers exposure	Assumes use at not more than 20°C above ambient temperature, unless stated differently.	
	Limit the substance content in the mixture to 5 %.(PROC9)	
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system.(PROC2)	
	provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC3)	
	Use a sampling system designed to control exposure.(PROC8a)	
	Clear transfer lines prior to de-coupling.(PROC8b)	
	No specific measures identified.(PROC15)	
Conditions and measures related	Use suitable eye protection.	

to personal protection, hygiene and health evaluation	Avoid direct eye contact with product, also via contamination on hands.

3. Exposure estimation and reference to its source

Workers

ECETOC TRA Version 2 with modifications has been used. Predicted exposures are not expected to exceed the applicable exposure limits when the operational conditions/risk management measures given in section 2 are implemented.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

STYRENE EXPOSURE SCENARIO

Print Date 20.01.2014

1. Short title of Exposure Scenario 10: Production of other styrene based polymeric dispersions

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	SU12: Manufacture of plastics products, including compounding and conversion
Process categories	PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC15: Use as laboratory reagent
Environmental Release Categories	ERC6c: Industrial use of monomers for manufacture of thermoplastics

2.1 Contributing scenario controlling environmental exposure for: ERC6c

No exposure assessment presented for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC2, PROC3, PROC8a, PROC8b, PROC9, PROC15

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	0,5 - 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
	Frequency of use	< 1 hours/day(PROC8b)
Other operational conditions affecting workers exposure	Assumes use at not more than 20°C above ambient temperature, unless stated differently.	
	Limit the substance content in the mixture to 5 %.(PROC9)	
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system.(PROC2)	
	provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC3)	
	Use a sampling system designed to control exposure.(PROC8a)	
	Clear transfer lines prior to de-coupling.(PROC8b)	
	No specific measures identified.(PROC15)	
Conditions and measures related to personal protection, hygiene	Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.	

and health evaluation

3. Exposure estimation and reference to its source

Workers

ECETOC TRA Version 2 with modifications has been used. Predicted exposures are not expected to exceed the applicable exposure limits when the operational conditions/risk management measures given in section 2 are implemented.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

STYRENE EXPOSURE SCENARIO

Print Date 20.01.2014

1. Short title of Exposure Scenario 11: Polymer production

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	SU12: Manufacture of plastics products, including compounding and conversion
Process categories	PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC15: Use as laboratory reagent
Environmental Release Categories	ERC6c: Industrial use of monomers for manufacture of thermoplastics

2.1 Contributing scenario controlling environmental exposure for: ERC6c

No exposure assessment presented for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC2, PROC3, PROC8a, PROC8b, PROC9, PROC15

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	0,5 - 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
	Frequency of use	< 1 hours/day(PROC8b)
Other operational conditions affecting workers exposure	Assumes use at not more than 20°C above ambient temperature, unless stated differently.	
	Limit the substance content in the mixture to 5 %.(PROC9)	
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system.(PROC2)	
	provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC3)	
	Use a sampling system designed to control exposure.(PROC8a)	
	Clear transfer lines prior to de-coupling.(PROC8b)	
	No specific measures identified.(PROC15)	
Conditions and measures related to personal protection, hygiene	Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.	

and health evaluation

3. Exposure estimation and reference to its source

Workers

ECETOC TRA Version 2 with modifications has been used. Predicted exposures are not expected to exceed the applicable exposure limits when the operational conditions/risk management measures given in section 2 are implemented.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

STYRENE EXPOSURE SCENARIO

Print Date 20.01.2014

1. Short title of Exposure Scenario 12: Production of resins	
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	SU12: Manufacture of plastics products, including compounding and conversion
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC15: Use as laboratory reagent
Environmental Release Categories	ERC2: Formulation of preparations

2.1 Contributing scenario controlling environmental exposure for: ERC2

No exposure assessment presented for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC15

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	0,5 - 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
	Frequency of use	< 1 hours/day(PROC8a)
Other operational conditions affecting workers exposure	Assumes use at not more than 20°C above ambient temperature, unless stated differently.	
Technical conditions and measures to control dispersion from source towards the worker	Clean up contamination/spills as soon as they occur.	
	Use in semi-automated and predominantly enclosed filling lines.(PROC1, PROC3)	
	Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.(PROC1)	
	Store substance within a closed system.(PROC3)	

	Use bulk or semi-bulk handling systems.(PROC3, PROC8b)
	provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC3, PROC4, PROC8a, PROC8b)
	Provide extraction ventilation at points where emissions occur.(PROC3, PROC5)
	Ensure dedicated sample points are provided.(PROC4)
	Avoid dip sampling.(PROC4)
	Put lids on containers immediately after use.(PROC5)
	Drain down and flush system prior to equipment opening or maintenance.(PROC3, PROC8a)
	Retain drain downs in sealed storage pending disposal or for subsequent recycle.(PROC3, PROC8a)
	Ensure operation is undertaken outdoors.(PROC8b)
	Use dedicated equipment.(PROC8b)
	Fill containers/cans at dedicated filling points supplied with local extract ventilation.(PROC9)
	Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure.(PROC15)
Organisational measures to prevent /limit releases, dispersion and exposure	Dispose of empty containers and wastes safely.(PROC8a)
	Ensure operatives are trained to minimise exposures.(PROC1, PROC3)
	Provide basic employee training to prevent /minimise exposures and to report any skin problems that may develop.
	Dispose of waste in accordance with environmental legislation.(PROC8a)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear a respirator conforming to EN140 with Type A filter or better.(PROC8a)
	Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands. Avoid direct skin contact with product. Wear suitable gloves tested to EN374 during the activities where the skin contact is possible. Wash off any skin contamination immediately.

3. Exposure estimation and reference to its source

Workers

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. For some of the Contributing Scenarios workplace exposures have been estimated from measured data. Predicted exposures are not expected to exceed the applicable exposure limits when the operational conditions/risk management measures given in section 2 are implemented.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

STYRENE EXPOSURE SCENARIO

Print Date 20.01.2014

1. Short title of Exposure Scenario 13: Use in liquid resins

Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)
Chemical product category	PC9a: Coatings and paints, thinners, paint removers
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

No exposure assessment presented for the environment.

2.2 Contributing scenario controlling consumer exposure for: PC9a

Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 35%
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 Pa
Amount used	Amount used per event	1 kg
Frequency and duration of use	Frequency of use	365 days/year
	Frequency of use	5 Times per day
	Exposure duration per event	30 min
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area: <= 108 cm²
Other given operational conditions affecting consumers exposure	Room size	34 m3
	Covers use in a one car garage (34 m3) under typical ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.	

3. Exposure estimation and reference to its source

Consumers

The ConsExpo model has been used to estimate consumer exposures unless otherwise indicated. Predicted exposures are not expected to exceed the applicable exposure limits when the operational conditions/risk management measures given in section 2 are implemented.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

STYRENE EXPOSURE SCENARIO

Print Date 20.01.2014

1. Short title of Exposure Scenario 14: Use in resin pastes

Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)
Chemical product category	PC9b: Fillers, putties, plasters, modelling clay
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

No exposure assessment presented for the environment.

2.2 Contributing scenario controlling consumer exposure for: PC9b

Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 35%
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 Pa
Amount used	Amount used per event	0,1 kg
Frequency and duration of use	Frequency of use	365 days/year
	Frequency of use	5 Times per day
	Exposure duration per event	10 min
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area: <= 22 cm²
Other given operational conditions affecting consumers exposure	Room size	34 m3
	Covers use in a one car garage (34 m3) under typical ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.	

3. Exposure estimation and reference to its source

Consumers

The ConsExpo model has been used to estimate consumer exposures unless otherwise indicated. Predicted exposures are not expected to exceed the applicable exposure limits when the operational conditions/risk management measures given in section 2 are implemented.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

STYRENE EXPOSURE SCENARIO

Print Date 20.01.2014

1. Short title of Exposure Scenario 15: Polymer processing

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	SU12: Manufacture of plastics products, including compounding and conversion
Process categories	PROC3: Use in closed batch process (synthesis or formulation) PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelettisation PROC15: Use as laboratory reagent
Environmental Release Categories	ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers

2.1 Contributing scenario controlling environmental exposure for: ERC6d

No exposure assessment presented for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC3, PROC5, PROC7, PROC8a, PROC10, PROC13, PROC14, PROC15

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	0,5 - 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
Other operational conditions affecting workers exposure	Assumes use at not more than 20°C above ambient temperature, unless stated differently.	
	Limit the substance content in the mixture to 25 %.(PROC5, PROC13, PROC14)	
Technical conditions and measures to control dispersion from source towards the worker	Clean up contamination/spills as soon as they occur.	
	Put lids on containers immediately after use.(PROC3, PROC5, PROC8a)	
	Transfer via enclosed lines.(PROC3)	
	provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC3, PROC7, PROC14)	
	Provide extraction ventilation at points where emissions occur.(PROC5, PROC8a, PROC13)	
	Handle substance within a predominantly closed system provided with extract	

	ventilation.(PROC5)
	Provide a good standard of controlled ventilation (10 to 15 air changes per hour)(PROC5, PROC10)
	Use drum pumps or carefully pour from container.(PROC5)
	Carry out in a vented booth or extracted enclosure.(PROC7)
	Use long handled tools where possible.(PROC7)
	Carefully pour from containers.(PROC7)
	Use long handled brushes and rollers where possible.(PROC10)
	Provide the operation with a properly sited receiving hood.(PROC14)
	No specific measures identified.(PROC15)
Organisational measures to prevent /limit releases, dispersion and exposure	Provide basic employee training to prevent /minimise exposures and to report any skin problems that may develop.
	Ensure the ventilation system is regularly maintained and tested.(PROC7, PROC10)
	Dispose of empty containers and wastes safely.(PROC7, PROC10)
	Contain and dispose of waste according to local regulations.(PROC8a)
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands. Avoid direct skin contact with product. Wear suitable gloves tested to EN374 during the activities where the skin contact is possible. Wash off any skin contamination immediately. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.
	Wear suitable coveralls to prevent exposure to the skin.(PROC7, PROC10)
	Wear a respirator conforming to EN140 with Type A filter or better.(PROC7)

3. Exposure estimation and reference to its source

Workers

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. Predicted exposures are not expected to exceed the applicable exposure limits when the operational conditions/risk management measures given in section 2 are implemented.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

STYRENE EXPOSURE SCENARIO

Print Date 20.01.2014

1. Short title of Exposure Scenario 16: Use in fibre-reinforced plastic applications

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Sectors of end-use	SU12: Manufacture of plastics products, including compounding and conversion
Process categories	PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC10: Roller application or brushing PROC11: Non industrial spraying
Environmental Release Categories	ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix

2.1 Contributing scenario controlling environmental exposure for: ERC8c

No exposure assessment presented for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC3, PROC4, PROC5, PROC8a, PROC10, PROC11

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	0,5 - 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
	Frequency of use	< 1 hours/day(PROC8a)
	Frequency of use	< 4 hours/day(PROC11)
Other operational conditions affecting workers exposure	Assumes use at not more than 20°C above ambient temperature, unless stated differently.	
	Limit the substance content in the mixture to 25 %.(PROC4, PROC10)	
Technical conditions and measures to control dispersion from source towards the worker	Clean up contamination/spills as soon as they occur.	
	provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC5, PROC8a, PROC10, PROC11)	
	Put lids on containers immediately after use.(PROC5)	
	Use drum pumps or carefully pour from container.(PROC5)	
	Use long handled brushes and rollers where possible.(PROC10)	

Organisational measures to prevent /limit releases, dispersion and exposure	Provide basic employee training to prevent /minimise exposures and to report any skin problems that may develop.
	Dispose of empty containers and wastes safely.(PROC8a)
	Segregate the activity away from other operations.(PROC11)
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands. Avoid direct skin contact with product. Wear suitable gloves tested to EN374 during the activities where the skin contact is possible. Wash off any skin contamination immediately. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.
	Wear a respirator conforming to EN140 with Type A filter or better.(PROC4, PROC5, PROC10)
	Wear a full face respirator conforming to EN140 with Type A filter or better.(PROC11)

3. Exposure estimation and reference to its source

Workers

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. Predicted exposures are not expected to exceed the applicable exposure limits when the operational conditions/risk management measures given in section 2 are implemented.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

STYRENE EXPOSURE SCENARIO

Print Date 20.01.2014

1. Short title of Exposure Scenario 17: Uses in coatings	
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	SU 10: Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelettisation PROC15: Use as laboratory reagent
Environmental Release Categories	ERC5: Industrial use resulting in inclusion into or onto a matrix

2.1 Contributing scenario controlling environmental exposure for: ERC5

No exposure assessment presented for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC10, PROC13, PROC14, PROC15

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	0,5 - 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
	Exposure duration per day	15 min - 1 h(PROC8b)
Other operational conditions affecting workers exposure	Assumes use at not more than 20°C above ambient temperature, unless stated differently.	
	Limit the substance content in the mixture to 5 %.(PROC8b)	
	Limit the substance content in the mixture to 25 %.(PROC10, PROC14)	

Technical conditions and measures to control dispersion from source towards the worker	Clean up contamination/spills as soon as they occur.
	Use in semi-automated and predominantly enclosed filling lines. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.(PROC1)
	Provide extraction ventilation at points where emissions occur. provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). (Efficiency: 30 %)(PROC4)
	Transfer via enclosed lines. provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). (Efficiency: 30 %)(PROC3)
	Put lids on containers immediately after use. Handle substance within a predominantly closed system provided with extract ventilation. Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). (Efficiency: 70 %)(PROC5)
	Use long handled brushes and rollers where possible. Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). (Efficiency: 70 %)(PROC10)
	Provide the operation with a properly sited receiving hood. or Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). (Efficiency: 70 %)(PROC14)
	Use long handled tools where possible. Carefully pour from containers. Carry out in a vented booth or extracted enclosure. provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). (Efficiency: 30 %)(PROC7)
	Put lids on containers immediately after use. Provide extract ventilation to points where emissions occur. (Efficiency: 70%) (PROC8a)
	Avoid carrying out operation for more than 1 hour. Clear transfer lines prior to de-coupling.(PROC8b)
	No specific measures identified.(PROC15)
Organisational measures to prevent /limit releases, dispersion and exposure	Provide basic employee training to prevent /minimise exposures and to report any skin problems that may develop.
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Wear suitable gloves tested to EN374 during the activities where the skin contact is possible.
	Wear suitable coveralls to prevent exposure to the skin.(PROC7)

3. Exposure estimation and reference to its source

Workers

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. Predicted exposures are not expected to exceed the applicable exposure limits when the operational conditions/risk management measures given in section 2 are implemented.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the

STYRENE EXPOSURE SCENARIO

Print Date 20.01.2014

Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.