

Identified Industrial Generic Exposure Scenarios (GESs) of Alpha-Methyl-Styrene (AMS)

GES No.	Subsector	Main SU	Description	PROC	ERC	Alpha-Methyl-Styrene (AMS)
						202-705-0
						98-83-9
EC No.						
CAS No.						
1	Manufacture, Processing and Distribution of substances and mixtures	All Industrial Uses (SU3)	Manufacture, Processing (see examples below ¹), Formulation and Distribution of the substance or mixtures. Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities	PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC14, PROC15	ERC1, ERC2, ERC4, ERC6a ERCs are to be checked with the ECT tool	x + PROC7
2	Use in laboratories	All Industrial Uses (SU3)	Use of the substance within laboratory settings, including material transfers and equipment cleaning	PROC10, PROC15	ERC4 ERCs are to be checked with the ECT tool	x
5	Rubber production and processing	All Industrial Uses (SU3)	Manufacture of tyres and general rubber articles, including processing of raw (uncured) rubber, handling and mixing of rubber additives, vulcanising, cooling and finishing.	PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14	ERC6d ERCs are to be checked with the ECT tool	x
6	Polymer manufacturing	All Industrial Uses (SU3)	Manufacturing of formulated polymers including material transfers, additives handling (e.g. pigments, stabilisers, fillers, plasticisers, etc.), moulding, curing and forming activities, material reworks, storage and associated maintenance.	PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15	ERC6d ERCs are to be checked with the ECT tool	x + PROC7 (see polymer examples ²)
7	Polymer processing	All Industrial Uses (SU3)	Processing of formulated polymers including material transfers, additives handling (e.g. pigments, stabilisers, fillers, plasticisers, etc.), moulding, curing and forming activities, material reworks, storage and associated maintenance.	PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15	ERC6d ERCs are to be checked with the ECT tool	x + PROC7 (see polymer examples ²)

¹ Examples for processing: use as intermediate,
use as monomer etc.
use as solvent,
use for the manufacturing of resins

² Polymer Examples: FRP, UV, VE

Please note also: PC's and AC's are only for consumer.
For checking ERC's please use the respective environmental calculation tool (ECT) ECT Acetone or ECT Phenol or ECT Cumene or ECT AMS or ECT ACP

Identified Industrial PROCs

PROC No.	Alpha-Methyl-Styrene (AMS)
EC No.	202-705-0
CAS No.	98-83-9
PROC1	x
PROC2	x
PROC3	x
PROC4	x
PROC5	x
PROC6	x
PROC7	x
PROC8a	x
PROC8b	x
PROC9	x
PROC10 (2 uses)	x
PROC13	x
PROC14	x
PROC15	x
Sum	14

Worksheet 2. Worker Chemical Safety Assessment Template: Tables 1 and 2 - Worker Chemical Safety Assessment (CSA)

Substance specific information		Reference Values		
Substance	Alpha-methyl-styrol	DNEL worker - inhalation (long term)	50	ppm
CASnr	98-83-9	DNEL worker - inhalation (short term)		ppm
Substance volatility:	0.253 kPa @25°C	DNEL worker - dermal (long term)	38	mg/kg/day
TRA volatility range	medium			
physical property	liquid			
Section 1		Exposure Scenario Title		
Exposure Scenario		Main sector of Use: SU3 = All Industrial Uses		
Processes, tasks, activities covered	All Industrial Processes relevant for Alpha-methyl-styrol and Alpha-methyl-styrol containing products.			
Life Cycle Stage / Sector of Use	SU3 = All Industrial Uses			
Applicable Use Descriptors (PROC or PC)	PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15			
Applicable Use Descriptors (ERC or SpERC)	ERCs and local conditions are to be checked with the Excel tool ECT Alpha-methyl-styrol			
Default Operational Conditions				
Product characteristics				
Acute Hazard	R phrases: 10 - Flammable, 36/37 -Irritating to eyes and respiratory system			
General measures	<p style="color: red; margin: 0;">Locate bulk storage outdoors [E2]</p> <p style="color: red; margin: 0;">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. [E1]</p> <p style="color: red; margin: 0;">Do not ingest. If swallowed then seek immediate medical assistance. [E14]</p> <p style="color: red; margin: 0;">Use suitable eye protection [PPE26]</p>			
concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) [G13].			
physical form of product	Liquid, vapour pressure 0.5 - 10 kPa [OC4].			
frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently) [G2]			
other Operational Conditions of use	Assumes a good basic standard of occupational hygiene is implemented [G1]. ;			

Section 2	Operational conditions and risk management measures
Section 2.1	Control of environmental exposure
Product characteristics	substance is a unique structure, non-hydrophobic., aromatic hydrocarbon, biodegradable
Amounts used	Annual site tonnage (tonnes/year): please use the Excel-Tool 'ECT Alpha-methyl-styrol' to calculate your maxium tonnage/year
Frequency and duration of use	Emission Days (days/year): 360d/y
Other Operational Conditions of use affecting environmental exposure	Indoor/Outdoor use
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Common practices vary across sites thus conservative process release estimates used. Typical technical measures are closed systems or scrubbers or charcoal adsorbers. Typical onsite offgas treatment technology provides removal efficiency of 90 %
Organisation measures to prevent/limit release from site	Common practices vary across sites thus conservative process release estimates used. Please use the Excel-Tool 'ECT Alpha-methyl-styrol' to check your local conditions.
Conditions and measures related to municipal sewage treatment plant	Please use the Excel-Tool 'ECT Alpha-methyl-styrol' to check your local conditions.
Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable regulations
Conditions and measures related to external recovery of waste	External treatment and disposal of waste should comply with applicable regulations
Other environmental control measures additional to above	
Section 2.2	Control of worker exposure
	see chapter RMMs
Section 3	Exposure Estimation
3.1. Health	GES Worker Chemical Safety Assessment (CSA) Template
	http://cefic.org/templates/shwPublications.asp?HID=750
3.2. Environment	ECT Alpha-methyl-styrol
	http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx
Section 4	Guidance to check compliance with the Exposure Scenario
4.1. Health	<i>Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.</i>

Generic Exposure Scenario: Industrial Processes relevant for Alpha-methyl-styrol and Alpha-methyl-styrol containing products					Risk Management Measures (RMMs)
No	Use Descriptor (PROCs)	SU 3 / SU 22	Contributing Scenario	Operational Conditions & typical RMMs	advised under REACH
1	PROC 1 - Use in closed process, no likelihood of exposure	Industrial SU3	General exposures (closed systems) [CS15].	(closed systems) [CS107].; Process sampling [CS2]. ;	Sample via a closed loop or other system to avoid exposure [E8].; Handle substance within a closed system [E47].
3	PROC 2 - Use in closed, continuous process with occasional controlled exposure	Industrial SU3	General exposures (closed systems) [CS15].	Continuous process [CS54]. ; Process sampling [CS2].	occasional exposure @ temp < 90 °C = medium volatility Sample via a closed loop or other system to avoid exposure [E8].; Handle substance within a closed system [E47].
5	PROC 3 - Use in closed batch process (synthesis or formulation)	Industrial SU3	General exposures (closed systems) [CS15].	Batch process [CS55]. Process sampling [CS2].	occasional exposure @ temp < 90 °C = medium volatility Sample via a closed loop or other system to avoid exposure [E8].; Handle substance within a closed system [E47].
7	PROC 4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Industrial SU3	Process sampling [CS2]. ; (open systems) [CS108]		occasional exposure @ temp < 90 °C = medium volatility
8	PROC 5 -Mixing or blending in batch processes (multistage and/or significant contact)	Industrial SU3	Mixing operations (open systems) [CS30].	Batch process [CS55]. ; Process sampling [CS2]. ; ; with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility Ensure material transfers are under containment or extract ventilation [E66].
9	PROC 5 -Mixing or blending in batch processes (multistage and/or significant contact)	Industrial SU3	Mixing operations (open systems) [CS30].	Batch process [CS55]. ; Process sampling [CS2]. ;	occasional exposure @ temp < 90 °C = medium volatility Avoid carrying out activities involving exposure for more than 4 hours [28].
10	PROC 6 -Calendering operations	Industrial SU3	Calendering (including Banburys) [CS64]	with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility Ensure material transfers are under containment or extract ventilation [E66].
11	PROC 6 -Calendering operations	Industrial SU3	Calendering (including Banburys) [CS64]		occasional exposure @ temp < 90 °C = medium volatility Avoid carrying out activities involving exposure for more than 4 hours [28].Wear suitable gloves tested to EN374 [PPE15].
11	PROC 6 -Calendering operations	Industrial SU3	Calendering (including Banburys) [CS64]		occasional exposure @ temp < 90 °C = medium volatility Limit the substance content in the product to 25% [OC18].Wear suitable gloves tested to EN374 [PPE15].
12	PROC 7 -Industrial spraying	Industrial SU3	Spraying/fogging by machine application [CS25].	with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility Ensure material transfers are under containment or extract ventilation [E66].
13	PROC 7 -Industrial spraying	Industrial SU3	Spraying/fogging by machine application [CS25].		occasional exposure @ temp < 90 °C = medium volatility Limit the substance content in the product to 25% [OC18].Ensure operation is undertaken outdoors [E69]. Avoid carrying out activities involving exposure for more than 1 hour [27].

Generic Exposure Scenario: Industrial Processes relevant for Alpha-methyl-styrol and Alpha-methyl-styrol containing products					Risk Management Measures (RMMs)	
No	Use Descriptor (PROCs)	SU 3 / SU 22	Contributing Scenario	Operational Conditions & typical RMMs	advised under REACH	
14	PROC 7 -Industrial spraying	Industrial SU3	-Spraying/fogging by machine application [CS25].		occasional exposure @ temp < 90 °C = medium volatility	Limit the substance content in the product to 5% [OC17].
15	PROC 8a -Transfer of chemicals from/to vessels/ large containers at non dedicated facilities	Industrial SU3	-Bulk transfers [CS14].	Non-dedicated facility [CS82]; Transfer from/pouring from containers [CS22]. ; with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility	Ensure material transfers are under containment or extract ventilation [E66].
16	PROC 8a -Transfer of chemicals from/to vessels/ large containers at non dedicated facilities	Industrial SU3	-Bulk transfers [CS14].	Non-dedicated facility [CS82]; Transfer from/pouring from containers [CS22].	occasional exposure @ temp < 90 °C = medium volatility	Ensure operation is undertaken outdoors [E69]. Wear suitable gloves tested to EN374 [PPE15].
17	PROC 8b -Transfer of chemicals from/to vessels/ large containers at dedicated facilities	Industrial SU3	-Bulk transfers [CS14].	Dedicated facility [CS81]; Transfer from/pouring from containers [CS22]. ; with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility	Ensure material transfers are under containment or extract ventilation [E66].
18	PROC 8b -Transfer of chemicals from/to vessels/ large containers at dedicated facilities	Industrial SU3	-Bulk transfers [CS14].	Dedicated facility [CS81]; Transfer from/pouring from containers [CS22].	occasional exposure @ temp < 90 °C = medium volatility	Ensure operation is undertaken outdoors [E69].
19	PROC 9 -Transfer of chemicals into small containers (dedicated filling line)	Industrial SU3	-Small package filling [CS7].	Dedicated facility [CS81]; Pouring from small containers [CS9]. ; with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility	Ensure material transfers are under containment or extract ventilation [E66].
20	PROC 9 -Transfer of chemicals into small containers (dedicated filling line)	Industrial SU3	-Small package filling [CS7].	Dedicated facility [CS81]; Pouring from small containers [CS9].	occasional exposure @ temp < 90 °C = medium volatility	Limit the substance content in the product to 25% [OC18].Ensure operation is undertaken outdoors [E69].
21	PROC 10 - Roller application or brushing	Industrial SU3	-Rolling, Brushing [CS51].	with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility	Ensure material transfers are under containment or extract ventilation [E66].
21	PROC 10 - Roller application or brushing	Industrial SU3	-Rolling, Brushing [CS51].		occasional exposure @ temp < 90 °C = medium volatility	Ensure operation is undertaken outdoors [E69]. Wear suitable gloves tested to EN374 [PPE15].
21	PROC 10 - Roller application or brushing	Industrial SU3	-Equipment cleaning and maintenance [CS39].		equipment prewashed/ rinsed automatically; occasional exposure @ temp < 90 °C = medium	Limit the substance content in the product to 5% [OC17].Drain or remove substance from equipment prior to break-in or maintenance [E81].
22	PROC 13 -Treatment of articles by dipping and pouring	Industrial SU3	-Dipping, immersion and pouring [CS4].	with local exhaust ventilation [CS109]		Ensure material transfers are under containment or extract ventilation [E66].

Generic Exposure Scenario: Industrial Processes relevant for Alpha-methyl-styrol and Alpha-methyl-styrol containing products					Risk Management Measures (RMMs)
No	Use Descriptor (PROCs)	SU 3 / SU 22	Contributing Scenario	Operational Conditions & typical RMMs	advised under REACH
23	PROC 13 -Treatment of articles by dipping and pouring	Industrial SU3	Dipping, immersion and pouring [CS4].		Avoid carrying out activities involving exposure for more than 4 hours [28].
24	PROC 14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation	Industrial SU3	Production or preparation or articles by tableting, compression, extrusion or pelletisation [CS100]	with local exhaust ventilation [CS109]	Ensure material transfers are under containment or extract ventilation [E66].
25	PROC 14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation	Industrial SU4	Production or preparation or articles by tableting, compression, extrusion or pelletisation [CS100]		Avoid carrying out activities involving exposure for more than 4 hours [28].
26	PROC 15 - Use of laboratory reagents in small scale laboratories	Industrial SU5	Laboratory activities [CS36].		

Generic Exposure Scenario: Industrial Processes relevant for Alpha-methyl-styrol and Alpha-methyl-styrol containing products					Inhalation Exposure								
No	Use Descriptor (PROCs)	SU 3 / SU 22	Contributing Scenario	Operational Conditions & typical RMMs	TRA Predicted Exposure - (ppm) - no modifiers	TRA LEV : efficiency (%)	Dilution ventilation effectiveness (%)	TRA concentration factor	TRA duration factor	TRA RPE factor	Extra exposure modifier: [optional]	Free text - comment to clarify additional modifier (inhalation)	Predicted Exposure - (ppm) - modified
1	PROC 1 - Use in closed process, no likelihood of exposure	Industrial SU3	General exposures (closed systems) [CS15].	(closed systems) [CS107].; Process sampling [CS2]. ;	0.01								0.01
3	PROC 2 - Use in closed, continuous process with occasional controlled exposure	Industrial SU3	General exposures (closed systems) [CS15].	Continuous process [CS54]. ; Process sampling [CS2].	10							occasional exposure @ temp < 90 °C = medium volatility	10
5	PROC 3 - Use in closed batch process (synthesis or formulation)	Industrial SU3	General exposures (closed systems) [CS15].	Batch process [CS55]. Process sampling [CS2].	25							occasional exposure @ temp < 90 °C = medium volatility	25
7	PROC 4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Industrial SU3	Process sampling [CS2]. ; (open systems) [CS108]		20							occasional exposure @ temp < 90 °C = medium volatility	20
8	PROC 5 -Mixing or blending in batch processes (multistage and/or significant contact)	Industrial SU3	Mixing operations (open systems) [CS30].	Batch process [CS55]. ; Process sampling [CS2]. ; ; with local exhaust ventilation [CS109]	50	90						occasional exposure @ temp < 90 °C = medium volatility	5
9	PROC 5 -Mixing or blending in batch processes (multistage and/or significant contact)	Industrial SU3	Mixing operations (open systems) [CS30].	Batch process [CS55]. ; Process sampling [CS2]. ;	50				1-4 hours			occasional exposure @ temp < 90 °C = medium volatility	30
10	PROC 6 -Calendering operations	Industrial SU3	Calendering (including Banburys) [CS64]	with local exhaust ventilation [CS109]	50	90						occasional exposure @ temp < 90 °C = medium volatility	5
11	PROC 6 -Calendering operations	Industrial SU3	Calendering (including Banburys) [CS64]		50				1-4 hours			occasional exposure @ temp < 90 °C = medium volatility	30
11	PROC 6 -Calendering operations	Industrial SU3	Calendering (including Banburys) [CS64]		50			5-25%				occasional exposure @ temp < 90 °C = medium volatility	30
12	PROC 7 -Industrial spraying	Industrial SU3	Spraying/fogging by machine application [CS25].	with local exhaust ventilation [CS109]	100	95						occasional exposure @ ambient temp = low volatility	5
13	PROC 7 -Industrial spraying	Industrial SU3	Spraying/fogging by machine application [CS25].		100		30	5-25%	15 min-1 hour			occasional exposure @ ambient temp = low volatility	8.4
14	PROC 7 -Industrial spraying	Industrial SU3	Spraying/fogging by machine application [CS25].		100			1-5%				occasional exposure @ ambient temp = low volatility	20
15	PROC 8a -Transfer of chemicals from/to vessels/ large containers at non dedicated facilities	Industrial SU3	Bulk transfers [CS14].	Non-dedicated facility [CS82]; Transfer from/pouring from containers [CS22]. ; with local exhaust ventilation [CS109]	50	90						occasional exposure @ temp < 90 °C = medium volatility	5

Generic Exposure Scenario: Industrial Processes relevant for Alpha-methyl-styrol and Alpha-methyl-styrol containing products					Inhalation Exposure								
No	Use Descriptor (PROCs)	SU 3 / SU 22	Contributing Scenario	Operational Conditions & typical RMMs	TRA Predicted Exposure - (ppm) - no modifiers	TRA LEV : efficiency (%)	Dilution ventilation effectiveness (%)	TRA concentration factor	TRA duration factor	TRA RPE factor	Extra exposure modifier: [optional]	Free text - comment to clarify additional modifier (inhalation)	Predicted Exposure - (ppm) - modified
16	PROC 8a -Transfer of chemicals from/to vessels/ large containers at non dedicated facilities	Industrial SU3	Bulk transfers [CS14].	Non-dedicated facility [CS82]; Transfer from/pouring from containers [CS22].	occasional exposure @ temp < 90 °C = medium volatility	50	30					occasional exposure @ temp < 90 °C = medium volatility	35
17	PROC 8b -Transfer of chemicals from/to vessels/ large containers at dedicated facilities	Industrial SU3	Bulk transfers [CS14].	Dedicated facility [CS81]; Transfer from/pouring from containers [CS22]. ; with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility	50	97					occasional exposure @ temp < 90 °C = medium volatility	1.5
18	PROC 8b -Transfer of chemicals from/to vessels/ large containers at dedicated facilities	Industrial SU3	Bulk transfers [CS14].	Dedicated facility [CS81]; Transfer from/pouring from containers [CS22].	occasional exposure @ temp < 90 °C = medium volatility	50	30					occasional exposure @ temp < 90 °C = medium volatility	35
19	PROC 9 -Transfer of chemicals into small containers (dedicated filling line)	Industrial SU3	Small package filling [CS7].	Dedicated facility [CS81]; Pouring from small containers [CS9]. ; with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility	50	90					occasional exposure @ temp < 90 °C = medium volatility	5
20	PROC 9 -Transfer of chemicals into small containers (dedicated filling line)	Industrial SU3	Small package filling [CS7].	Dedicated facility [CS81]; Pouring from small containers [CS9].	occasional exposure @ temp < 90 °C = medium volatility	50	30					occasional exposure @ temp < 90 °C = medium volatility	35
21	PROC 10 - Roller application or brushing	Industrial SU3	Rolling, Brushing [CS51].	with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility	50	90					occasional exposure @ temp < 90 °C = medium volatility	5
21	PROC 10 - Roller application or brushing	Industrial SU3	Rolling, Brushing [CS51].		occasional exposure @ temp < 90 °C = medium volatility	50	30					occasional exposure @ temp < 90 °C = medium volatility	35
21	PROC 10 - Roller application or brushing	Industrial SU3	Equipment cleaning and maintenance [CS39].		equipment prewashed/ rinsed automatically; occasional exposure @ temp < 90 °C = medium	50		1-5%				equipment prewashed/ rinsed automatically	10
22	PROC 13 -Treatment of articles by dipping and pouring	Industrial SU3	Dipping, immersion and pouring [CS4].	with local exhaust ventilation [CS109]		50	90					occasional exposure @ temp < 90 °C = medium volatility	5
23	PROC 13 -Treatment of articles by dipping and pouring	Industrial SU3	Dipping, immersion and pouring [CS4].			50			1-4 hours			occasional exposure @ temp < 90 °C = medium volatility	30
24	PROC 14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation	Industrial SU3	Production or preparation or articles by tableting, compression, extrusion or pelletisation [CS100]	with local exhaust ventilation [CS109]		50	90					occasional exposure @ temp < 90 °C = medium volatility	5
25	PROC 14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation	Industrial SU4	Production or preparation or articles by tableting, compression, extrusion or pelletisation [CS100]			50			1-4 hours			occasional exposure @ temp < 90 °C = medium volatility	30
26	PROC 15 - Use of laboratory reagents in small scale laboratories	Industrial SU5	Laboratory activities [CS36].			10						occasional exposure @ temp < 90 °C = medium volatility	10

Generic Exposure Scenario: Industrial Processes relevant for Alpha-methyl-styrol and Alpha-methyl-styrol containing products					Dermal Exposure						
No	Use Descriptor (PROCs)	SU 3 / SU 22	Contributing Scenario	Operational Conditions & typical RMMs	TRA Predicted Dermal exposure (mg/kg/d) - no modifiers	TRA Dermal exposure LEV reduction factor	TRA concentration factor	PPE factor	extra exposure modifier: [optional]	Free text - comment to clarify additional modifier (dermal)	Predicted Dermal Exposure (mg/kg/d) - modified
1	PROC 1 - Use in closed process, no likelihood of exposure	Industrial SU3	General exposures (closed systems) [CS15].	(closed systems) [CS107].; Process sampling [CS2]. ;	0.34						0.34
3	PROC 2 - Use in closed, continuous process with occasional controlled exposure	Industrial SU3	General exposures (closed systems) [CS15].	Continuous process [CS54]. ; Process sampling [CS2].	1.37						1.37
5	PROC 3 - Use in closed batch process (synthesis or formulation)	Industrial SU3	General exposures (closed systems) [CS15].	Batch process [CS55]. Process sampling [CS2].	0.34						0.34
7	PROC 4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Industrial SU3	Process sampling [CS2]. ; (open systems) [CS108]		6.86						6.86
8	PROC 5 -Mixing or blending in batch processes (multistage and/or significant contact)	Industrial SU3	Mixing operations (open systems) [CS30].	Batch process [CS55]. ; Process sampling [CS2]. ; ; with local exhaust ventilation [CS109]	13.71	0.005					0.07
9	PROC 5 -Mixing or blending in batch processes (multistage and/or significant contact)	Industrial SU3	Mixing operations (open systems) [CS30].	Batch process [CS55]. ; Process sampling [CS2]. ;	13.71						13.71
10	PROC 6 -Calendering operations	Industrial SU3	Calendering (including Banburys) [CS64]	with local exhaust ventilation [CS109]	27.43	0.05					1.37
11	PROC 6 -Calendering operations	Industrial SU3	Calendering (including Banburys) [CS64]		27.43			gloves			5.49
11	PROC 6 -Calendering operations	Industrial SU3	Calendering (including Banburys) [CS64]		27.43		5-25%	gloves			3.29
12	PROC 7 -Industrial spraying	Industrial SU3	Spraying/fogging by machine application [CS25].	with local exhaust ventilation [CS109]	42.86	0.05					2.14
13	PROC 7 -Industrial spraying	Industrial SU3	Spraying/fogging by machine application [CS25].		42.86		5-25%				25.72
14	PROC 7 -Industrial spraying	Industrial SU3	Spraying/fogging by machine application [CS25].		42.86		1-5%				8.57
15	PROC 8a -Transfer of chemicals from/to vessels/ large containers at non dedicated facilities	Industrial SU3	Bulk transfers [CS14].	Non-dedicated facility [CS82]; Transfer from/pouring from containers [CS22]. ; with local exhaust ventilation [CS109]	13.71	0.01					0.14

Generic Exposure Scenario: Industrial Processes relevant for Alpha-methyl-styrol and Alpha-methyl-styrol containing products					Dermal Exposure						
No	Use Descriptor (PROCs)	SU 3 / SU 22	Contributing Scenario	Operational Conditions & typical RMMs	TRA Predicted Dermal exposure (mg/kg/d) - no modifiers	TRA Dermal exposure LEV reduction factor	TRA concentration factor	PPE factor	extra exposure modifier: [optional]	Free text - comment to clarify additional modifier (dermal)	Predicted Dermal Exposure (mg/kg/d) - modified
16	PROC 8a -Transfer of chemicals from/to vessels/ large containers at non dedicated facilities	Industrial SU3	Bulk transfers [CS14].	Non-dedicated facility [CS82]; Transfer from/pouring from containers [CS22].	occasional exposure @ temp < 90 °C = medium volatility	13.71			gloves		2.74
17	PROC 8b -Transfer of chemicals from/to vessels/ large containers at dedicated facilities	Industrial SU3	Bulk transfers [CS14].	Dedicated facility [CS81]; Transfer from/pouring from containers [CS22]. ; with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility	6.86	0.1				0.69
18	PROC 8b -Transfer of chemicals from/to vessels/ large containers at dedicated facilities	Industrial SU3	Bulk transfers [CS14].	Dedicated facility [CS81]; Transfer from/pouring from containers [CS22].	occasional exposure @ temp < 90 °C = medium volatility	6.86					6.86
19	PROC 9 -Transfer of chemicals into small containers (dedicated filling line)	Industrial SU3	Small package filling [CS7].	Dedicated facility [CS81]; Pouring from small containers [CS9]. ; with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility	6.86	0.1				0.69
20	PROC 9 -Transfer of chemicals into small containers (dedicated filling line)	Industrial SU3	Small package filling [CS7].	Dedicated facility [CS81]; Pouring from small containers [CS9].	occasional exposure @ temp < 90 °C = medium volatility	6.86					6.86
21	PROC 10 - Roller application or brushing	Industrial SU3	Rolling, Brushing [CS51].	with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility	27.43	0.05				1.37
21	PROC 10 - Roller application or brushing	Industrial SU3	Rolling, Brushing [CS51].		occasional exposure @ temp < 90 °C = medium volatility	27.43			gloves		5.49
21	PROC 10 - Roller application or brushing	Industrial SU3	Equipment cleaning and maintenance [CS39].		equipment prewashed/ rinsed automatically; occasional exposure @ temp < 90 °C = medium	27.43		1-5%			5.49
22	PROC 13 -Treatment of articles by dipping and pouring	Industrial SU3	Dipping, immersion and pouring [CS4].	with local exhaust ventilation [CS109]		13.71	0.05				0.69
23	PROC 13 -Treatment of articles by dipping and pouring	Industrial SU3	Dipping, immersion and pouring [CS4].			13.71					13.71
24	PROC 14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation	Industrial SU3	Production or preparation or articles by tableting, compression, extrusion or pelletisation [CS100]	with local exhaust ventilation [CS109]		3.43	0.1				0.34
25	PROC 14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation	Industrial SU4	Production or preparation or articles by tableting, compression, extrusion or pelletisation [CS100]			3.43					3.43
26	PROC 15 - Use of laboratory reagents in small scale laboratories	Industrial SU5	Laboratory activities [CS36].			0.34					0.34

Generic Exposure Scenario: Industrial Processes relevant for Alpha-methyl-styrol and Alpha-methyl-styrol containing products						Risk Characterization		
No	Use Descriptor (PROCs)	SU 3 / SU 22	Contributing Scenario	Operational Conditions & typical RMMs		RCR (inhalation)	RCR (dermal)	RCR (all routes)
1	PROC 1 - Use in closed process, no likelihood of exposure	Industrial SU3	General exposures (closed systems) [CS15].	(closed systems) [CS107].; Process sampling [CS2]. ;		0.000	0.01	0.01
3	PROC 2 - Use in closed, continuous process with occasional controlled exposure	Industrial SU3	General exposures (closed systems) [CS15].	Continuous process [CS54]. ; Process sampling [CS2].	occasional exposure @ temp < 90 °C = medium volatility	0.20	0.04	0.24
5	PROC 3 - Use in closed batch process (synthesis or formulation)	Industrial SU3	General exposures (closed systems) [CS15].	Batch process [CS55]. Process sampling [CS2].	occasional exposure @ temp < 90 °C = medium volatility	0.50	0.01	0.51
7	PROC 4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Industrial SU3	Process sampling [CS2]. ; (open systems) [CS108]		occasional exposure @ temp < 90 °C = medium volatility	0.40	0.18	0.58
8	PROC 5 -Mixing or blending in batch processes (multistage and/or significant contact)	Industrial SU3	Mixing operations (open systems) [CS30].	Batch process [CS55]. ; Process sampling [CS2]. ; ; with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility	0.10	0.00	0.10
9	PROC 5 -Mixing or blending in batch processes (multistage and/or significant contact)	Industrial SU3	Mixing operations (open systems) [CS30].	Batch process [CS55]. ; Process sampling [CS2]. ;	occasional exposure @ temp < 90 °C = medium volatility	0.60	0.36	0.96
10	PROC 6 -Calendering operations	Industrial SU3	Calendering (including Banburys) [CS64]	with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility	0.10	0.04	0.14
11	PROC 6 -Calendering operations	Industrial SU3	Calendering (including Banburys) [CS64]		occasional exposure @ temp < 90 °C = medium volatility	0.60	0.144	0.74
11	PROC 6 -Calendering operations	Industrial SU3	Calendering (including Banburys) [CS64]		occasional exposure @ temp < 90 °C = medium volatility	0.60	0.09	0.69
12	PROC 7 -Industrial spraying	Industrial SU3	Spraying/fogging by machine application [CS25].	with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility	0.10	0.06	0.16
13	PROC 7 -Industrial spraying	Industrial SU3	Spraying/fogging by machine application [CS25].		occasional exposure @ temp < 90 °C = medium volatility	0.17	0.68	0.84

Generic Exposure Scenario: Industrial Processes relevant for Alpha-methyl-styrol and Alpha-methyl-styrol containing products					Risk Characterization			
No	Use Descriptor (PROCs)	SU 3 / SU 22	Contributing Scenario	Operational Conditions & typical RMMs	RCR (inhalation)	RCR (dermal)	RCR (all routes)	
14	PROC 7 -Industrial spraying	Industrial SU3	-Spraying/fogging by machine application [CS25].		occasional exposure @ temp < 90 °C = medium volatility	0.40	0.23	0.63
15	PROC 8a -Transfer of chemicals from/to vessels/ large containers at non dedicated facilities	Industrial SU3	-Bulk transfers [CS14].	Non-dedicated facility [CS82]; Transfer from/pouring from containers [CS22]. ; with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility	0.10	0.00	0.10
16	PROC 8a -Transfer of chemicals from/to vessels/ large containers at non dedicated facilities	Industrial SU3	-Bulk transfers [CS14].	Non-dedicated facility [CS82]; Transfer from/pouring from containers [CS22].	occasional exposure @ temp < 90 °C = medium volatility	0.70	0.07	0.77
17	PROC 8b -Transfer of chemicals from/to vessels/ large containers at dedicated facilities	Industrial SU3	-Bulk transfers [CS14].	Dedicated facility [CS81]; Transfer from/pouring from containers [CS22]. ; with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility	0.03	0.02	0.05
18	PROC 8b -Transfer of chemicals from/to vessels/ large containers at dedicated facilities	Industrial SU3	-Bulk transfers [CS14].	Dedicated facility [CS81]; Transfer from/pouring from containers [CS22].	occasional exposure @ temp < 90 °C = medium volatility	0.70	0.18	0.88
19	PROC 9 -Transfer of chemicals into small containers (dedicated filling line)	Industrial SU3	-Small package filling [CS7].	Dedicated facility [CS81]; Pouring from small containers [CS9]. ; with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility	0.10	0.02	0.12
20	PROC 9 -Transfer of chemicals into small containers (dedicated filling line)	Industrial SU3	-Small package filling [CS7].	Dedicated facility [CS81]; Pouring from small containers [CS9].	occasional exposure @ temp < 90 °C = medium volatility	0.70	0.18	0.88
21	PROC 10 - Roller application or brushing	Industrial SU3	-Rolling, Brushing [CS51].	with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility	0.10	0.04	0.14
21	PROC 10 - Roller application or brushing	Industrial SU3	-Rolling, Brushing [CS51].		occasional exposure @ temp < 90 °C = medium volatility	0.70	0.14	0.84
21	PROC 10 - Roller application or brushing	Industrial SU3	-Equipment cleaning and maintenance [CS39].		equipment prewashed/ rinsed automatically; occasional exposure @ temp < 90 °C = medium	0.20	0.14	0.34
22	PROC 13 -Treatment of articles by dipping and pouring	Industrial SU3	-Dipping, immersion and pouring [CS4].	with local exhaust ventilation [CS109]		0.10	0.02	0.12

Generic Exposure Scenario: Industrial Processes relevant for Alpha-methyl-styrol and Alpha-methyl-styrol containing products					Risk Characterization		
No	Use Descriptor (PROCs)	SU 3 / SU 22	Contributing Scenario	Operational Conditions & typical RMMs	RCR (inhalation)	RCR (dermal)	RCR (all routes)
23	PROC 13 -Treatment of articles by dipping and pouring	Industrial SU3	Dipping, immersion and pouring [CS4].		0.60	0.36	0.96
24	PROC 14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation	Industrial SU3	Production or preparation or articles by tableting, compression, extrusion or pelletisation [CS100]	with local exhaust ventilation [CS109]	0.10	0.01	0.11
25	PROC 14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation	Industrial SU4	Production or preparation or articles by tableting, compression, extrusion or pelletisation [CS100]		0.60	0.09	0.69
26	PROC 15 - Use of laboratory reagents in small scale laboratories	Industrial SU5	Laboratory activities [CS36].		0.20	0.01	0.21

Identified Professional Generic Exposure Scenarios (GESs) of Alpha-Methyl-Styrene (AMS)

GES No.	Subsector	Main SU	Description	PROC	ERC	Alpha-Methyl-Styrene (AMS)
EC No.						202-705-0
CAS No.						98-83-9
1	Use in laboratories	All Professional Uses (SU22)	Use of small quantities within laboratory settings, including material transfers and equipment cleaning	PROC10, PROC15	ERC8a ERCs are to be checked with the ECT tool	x
4	Polymer manufacturing	All Professional Uses (SU22)	Manufacturing of formulated polymers including material transfers, moulding and forming activities, material re-works and associated maintenance.	PROC8a	ERC8a, ERC8d, ERC8c, ERC8f ERCs are to be checked with the ECT tool	x + PROC4 PROC5 PROC10 PROC11 PROC19 (see polymer examples2)
5	Polymer processing	All Professional Uses (SU22)	Processing of formulated polymers including material transfers, moulding and forming activities, material re-works and associated maintenance.	PROC8a	ERC8a, ERC8d, ERC8c, ERC8f ERCs are to be checked with the ECT tool	x + PROC4 PROC5 PROC10 PROC11 PROC19 (see polymer examples2)

² Polymer Examples: FRP, UV, VE

Please note also: PC's and AC's are only for consumer.
For checking ERC's please use the respective environmental calculation tool (ECT) ECT Acetone or ECT Phenol or ECT Cumene or ECT AMS or ECT ACP

Identified Professional PROCs

PROC No.	Alpha-Methyl-Styrene (AMS)
EC No.	202-705-0
CAS No.	98-83-9
PROC4	x
PROC5	x
PROC8a	x
PROC10 (2 uses)	x
PROC11	x
PROC15	x
PROC19	x
Sum	7

Worksheet 2. Worker Chemical Safety Assessment Template: Tables 1 and 2 - Worker Chemical Safety Assessment (CSA)

Substance specific information		Reference Values		
Substance	Alpha-methyl-styrol	DNEL worker - inhalation (long term)	50	ppm
CASnr	98-83-9	DNEL worker - inhalation (short term)		ppm
Substance volatility:	0.253 kPa @25°C	DNEL worker - dermal (long term)	38	mg/kg/day
TRA volatility range	medium			
physical property	liquid			
Section 1		Exposure Scenario Title		
Exposure Scenario		Main sector of Use: SU22 = All Professional Uses		
Processes, tasks, activities covered	All Professional Prozesses relevant for Alpha-methyl-styrol and Alpha-methyl-styrol containing products.			
Life Cycle Stage / Sector of Use	SU22 = All Professional Uses			
Applicable Use Descriptors (PROC or PC)	PROC1, PROC2, PROC8a, PROC8b, PROC14			
Applicable Use Descriptors (ERC or SpERC)	ERCs and local conditions are to be checked with the Excel tool ECT Alpha-methyl-styrol			
Default Operational Conditions				
Product characteristics				
Acute Hazard	R phrases: 10 - Flammable, 36/37 -Irritating to eyes and respiratory system			
General measures	<p style="color: red; margin: 0;">Locate bulk storage outdoors [E2]</p> <p style="color: red; margin: 0;">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. [E1]</p> <p style="color: red; margin: 0;">Do not ingest. If swallowed then seek immediate medical assistance. [E14]</p> <p style="color: red; margin: 0;">Use suitable eye protection [PPE26]</p>			
concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) [G13].			
physical form of product	Liquid, vapour pressure 0.5 - 10 kPa [OC4].			
frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently) [G2]			
other Operational Conditions of use	Assumes a good basic standard of occupational hygiene is implemented [G1]. ;			

Section 2	Operational conditions and risk management measures
Section 2.1	Control of environmental exposure
Product characteristics	substance is a unique structure, ketone, readily biodegradable
Amounts used	Annual site tonnage (tonnes/year): please use the Excel-Tool 'ECT Alpha-methyl-styrol' to calculate your maxium tonnage/year
Frequency and duration of use	Emission Days (days/year): 360d/y
Other Operational Conditions of use affecting environmental exposure	Indoor/Outdoor use
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Common practices vary across sites thus conservative process release estimates used. Typical technical measures are closed systems or scrubbers or charcoal adsorbers. Typical onsite offgas treatment technology provides removal efficiency of 90 %
Organisation measures to prevent/limit release from site	Common practices vary across sites thus conservative process release estimates used. Please use the Excel-Tool 'ECT Alpha-methyl-styrol' to check your local conditions.
Conditions and measures related to municipal sewage treatment plant	Please use the Excel-Tool 'ECT Alpha-methyl-styrol' to check your local conditions.
Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable regulations
Conditions and measures related to external recovery of waste	External treatment and disposal of waste should comply with applicable regulations
Other environmental control measures additional to above	
Section 2.2	Control of worker exposure
	see chapter RMMs
Section 3	Exposure Estimation
3.1. Health	GES Worker Chemical Safety Assessment (CSA) Template
	http://cefic.org/templates/shwPublications.asp?HID=750
3.2. Environment	ECT Alpha-methyl-styrol
	http://www.reachcentrum.eu/EN/consortium-management/consortia-under-reach/phenol-derivatives-reach-consortium.aspx
Section 4	Guidance to check compliance with the Exposure Scenario
4.1. Health	<i>Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.</i>

Generic Exposure Scenario:		Professional Processes relevant for Alpha-methyl-styrol and Alpha-methyl-styrol containing products			Risk Management Measures (RMMs)	
No	Use Descriptor (PROCs)	SU 3 / SU 22	Contributing Scenario	Operational Conditions & typical RMMs	advised under REACH	
1	PROC 1 - Use in closed process, no likelihood of exposure	Professional - SU21	General exposures (closed systems) [CS15].	(closed systems) [CS107].; Process sampling [CS2]. ;	Sample via a closed loop or other system to avoid exposure [E8].; Handle substance within a closed system [E47].	
3	PROC 2 - Use in closed, continuous process with occasional controlled exposure	Professional - SU22	General exposures (closed systems) [CS15].	Continuous process [CS54]. ; Process sampling [CS2].	occasional exposure @ temp < 90 °C = medium volatility	Sample via a closed loop or other system to avoid exposure [E8].; Handle substance within a closed system [E47].
4	PROC 4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Professional - SU22	Process sampling [CS2]. ; (open systems) [CS108]	with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility	Ensure material transfers are under containment or extract ventilation [E66].
4	PROC 4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Professional - SU22	Process sampling [CS2]. ; (open systems) [CS108]		occasional exposure @ temp < 90 °C = medium volatility	Avoid carrying out activities involving exposure for more than 4 hours [28].
4	PROC 5 -Mixing or blending in batch processes (multistage and/or significant contact)	Professional - SU22	Mixing operations (open systems) [CS30].	Batch process [CS55]. ; Process sampling [CS2]. ; with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility	Ensure material transfers are under containment or extract ventilation [E66].
4	PROC 5 -Mixing or blending in batch processes (multistage and/or significant contact)	Professional - SU22	Mixing operations (open systems) [CS30].	Batch process [CS55]. ; Process sampling [CS2].	occasional exposure @ temp < 90 °C = medium volatility	Avoid carrying out activities involving exposure for more than 1 hour [27].
4	PROC 8a -Transfer of chemicals from/to vessels/ large containers at non dedicated facilities	Professional - SU22	Bulk transfers [CS14].	Non-dedicated facility [CS82]; Transfer from/pouring from containers [CS22]. ; with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility	Ensure material transfers are under containment or extract ventilation [E66].
5	PROC 8a -Transfer of chemicals from/to vessels/ large containers at non dedicated facilities	Professional - SU22	Bulk transfers [CS14].	Non-dedicated facility [CS82]; Transfer from/pouring from containers [CS22].	occasional exposure @ temp < 90 °C = medium volatility	Avoid carrying out activities involving exposure for more than 1 hour [27].
6	PROC 8b -Transfer of chemicals from/to vessels/ large containers at dedicated facilities	Professional - SU23	Bulk transfers [CS14].	Dedicated facility [CS81]; Transfer from/pouring from containers [CS22]. ; with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility	Ensure material transfers are under containment or extract ventilation [E66].
7	PROC 8b -Transfer of chemicals from/to vessels/ large containers at dedicated facilities	Professional - SU24	Bulk transfers [CS14].	Dedicated facility [CS81]; Transfer from/pouring from containers [CS22].	occasional exposure @ temp < 90 °C = medium volatility	Avoid carrying out activities involving exposure for more than 4 hours [28].
8	PROC 10 - Roller application or brushing	Professional - SU22	Rolling, Brushing [CS51].	with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility	Ensure material transfers are under containment or extract ventilation [E66].

Generic Exposure Scenario:		Professional Prozesses relevant for Alpha-methyl-styrol and Alpha-methyl-styrol containing products			Risk Management Measures (RMMs)	
No	Use Descriptor (PROCs)	SU 3 / SU 22	Contributing Scenario	Operational Conditions & typical RMMs	advised under REACH	
9	PROC 10 - Roller application or brushing	Professional - SU22	Equipment cleaning and maintenance [CS39].		occasional exposure @ temp < 90 °C = medium volatility	Limit the substance content in the product to 5% [OC17]. Drain or remove substance from equipment prior to break-in or maintenance [E81].
10	PROC 11 - Non industrial spraying	Professional - SU23	Spraying [CS10].	with local exhaust ventilation [CS109]		Ensure material transfers are under containment or extract ventilation [E66]. Avoid carrying out activities involving exposure for more than 1 hour [27].
10	PROC 11 - Non industrial spraying	Professional - SU23	Spraying [CS10].			Avoid carrying out activities involving exposure for more than 4 hours [28]. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]. ; Wear a respirator conforming to EN140 with Type A filter or better. [PPE22]
10	PROC 14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation	Professional - SU22	Production or preparation or articles by tableting, compression, extrusion or pelletisation [CS100]	with local exhaust ventilation [CS109]		Ensure material transfers are under containment or extract ventilation [E66].
11	PROC 14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation	Professional - SU22	Production or preparation or articles by tableting, compression, extrusion or pelletisation [CS100]			Limit the substance content in the product to 25% [OC18]. Avoid carrying out activities involving exposure for more than 4 hours [28].
11	PROC 14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation	Professional - SU22	Production or preparation or articles by tableting, compression, extrusion or pelletisation [CS100]			Avoid carrying out activities involving exposure for more than 1 hour [27].
12	PROC 15 - Use of laboratory reagents in small scale laboratories	Professional - SU22	Laboratory activities [CS36].	with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility	Ensure material transfers are under containment or extract ventilation [E66].
12	PROC 19 - Hand-mixing with intimate contact (only PPE available)	Professional - SU23			occasional exposure @ temp < 90 °C = medium volatility	Avoid carrying out activities involving exposure for more than 1 hour [27]. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16].

Generic Exposure Scenario: Professional Processes relevant for Alpha-methyl-styrol and Alpha-methyl-styrol containing products					Inhalation Exposure								
No	Use Descriptor (PROCs)	SU 3 / SU 22	Contributing Scenario	Operational Conditions & typical RMMs	TRA Predicted Exposure - (ppm) - no modifiers	TRA LEV : efficiency (%)	Dilution ventilation effectiveness (%)	TRA concentration factor	TRA duration factor	TRA RPE factor	Extra exposure modifier: [optional]	Free text - comment to clarify additional modifier (inhalation)	Predicted Exposure - (ppm) - modified
1	PROC 1 - Use in closed process, no likelihood of exposure	Professional - SU21	General exposures (closed systems) [CS15].	(closed systems) [CS107]; Process sampling [CS2]. ;	0.01								0.01
3	PROC 2 - Use in closed, continuous process with occasional controlled exposure	Professional - SU22	General exposures (closed systems) [CS15].	Continuous process [CS54]. ; Process sampling [CS2].	20							occasional exposure @ temp < 90 °C = medium volatility	20
4	PROC 4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Professional - SU22	Process sampling [CS2]. ; (open systems) [CS108]	with local exhaust ventilation [CS109]	50	80						occasional exposure @ temp < 90 °C = medium volatility	10
4	PROC 4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Professional - SU22	Process sampling [CS2]. ; (open systems) [CS108]		50				1-4 hours			occasional exposure @ temp < 90 °C = medium volatility	30
4	PROC 5 -Mixing or blending in batch processes (multistage and/or significant contact)	Professional - SU22	Mixing operations (open systems) [CS30].	Batch process [CS55]. ; Process sampling [CS2]. ; with local exhaust ventilation [CS109]	100	80						occasional exposure @ temp < 90 °C = medium volatility	20
4	PROC 5 -Mixing or blending in batch processes (multistage and/or significant contact)	Professional - SU22	Mixing operations (open systems) [CS30].	Batch process [CS55]. ; Process sampling [CS2].	100				15 min-1 hour			occasional exposure @ temp < 90 °C = medium volatility	20
4	PROC 8a -Transfer of chemicals from/to vessels/ large containers at non dedicated facilities	Professional - SU22	Bulk transfers [CS14].	Non-dedicated facility [CS82]; Transfer from/pouring from containers [CS22]. ; with local exhaust ventilation [CS109]	100	80						occasional exposure @ temp < 90 °C = medium volatility	20
5	PROC 8a -Transfer of chemicals from/to vessels/ large containers at non dedicated facilities	Professional - SU22	Bulk transfers [CS14].	Non-dedicated facility [CS82]; Transfer from/pouring from containers [CS22].	100				15 min-1 hour			occasional exposure @ temp < 90 °C = medium volatility	20
6	PROC 8b -Transfer of chemicals from/to vessels/ large containers at dedicated facilities	Professional - SU23	Bulk transfers [CS14].	Dedicated facility [CS81]; Transfer from/pouring from containers [CS22]. ; with local exhaust ventilation [CS109]	50	90						occasional exposure @ temp < 90 °C = medium volatility	5
7	PROC 8b -Transfer of chemicals from/to vessels/ large containers at dedicated facilities	Professional - SU24	Bulk transfers [CS14].	Dedicated facility [CS81]; Transfer from/pouring from containers [CS22].	50				1-4 hours			occasional exposure @ temp < 90 °C = medium volatility	30
8	PROC 10 - Roller application or brushing	Professional - SU22	Rolling, Brushing [CS51].	with local exhaust ventilation [CS109]	100	80						occasional exposure @ temp < 90 °C = medium volatility	20
9	PROC 10 - Roller application or brushing	Professional - SU22	Equipment cleaning and maintenance [CS39].		100			1-5%				occasional exposure @ temp < 90 °C = medium volatility	20
10	PROC 11 - Non industrial spraying	Professional - SU23	Spraying [CS10].	with local exhaust ventilation [CS109]	500	80			15 min-1 hour			occasional exposure @ temp < 90 °C = medium volatility	20

Generic Exposure Scenario: Professional Prozesses relevant for Alpha-methyl-styrol and Alpha-methyl-styrol containing products					Inhalation Exposures								
No	Use Descriptor (PROCs)	SU 3 / SU 22	Contributing Scenario	Operational Conditions & typical RMMs	TRA Predicted Exposure - (ppm) - no modifiers	TRA LEV : efficiency (%)	Dilution ventilation effectiveness (%)	TRA concentration factor	TRA duration factor	TRA RPE factor	Extra exposure modifier: [optional]	Free text - comment to clarify additional modifier (inhalation)	Predicted Exposure - (ppm) - modified
10	PROC 11 - Non industrial spraying	Professional - SU23	Spraying [CS10].		500				1-4 hours	half mask		occasional exposure @ temp < 90 °C = medium volatility	30
10	PROC 14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation	Professional - SU22	Production or preparation of articles by tableting, compression, extrusion or pelletisation [CS100]	with local exhaust ventilation [CS109]	100	80						occasional exposure @ temp < 90 °C = medium volatility	20
11	PROC 14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation	Professional - SU22	Production or preparation of articles by tableting, compression, extrusion or pelletisation [CS100]		100			5-25%	1-4 hours			occasional exposure @ temp < 90 °C = medium volatility	36
11	PROC 14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation	Professional - SU22	Production or preparation of articles by tableting, compression, extrusion or pelletisation [CS100]		100				15 min-1 hour			occasional exposure @ temp < 90 °C = medium volatility	20
12	PROC 15 - Use of laboratory reagents in small scale laboratories	Professional - SU22	Laboratory activities [CS36].	with local exhaust ventilation [CS109]	10	80						occasional exposure @ temp < 90 °C = medium volatility	2
12	PROC 19 - Hand-mixing with intimate contact (only PPE available)	Professional - SU23			100				15 min-1 hour			occasional exposure @ temp < 90 °C = medium volatility	20

Generic Exposure Scenario: Professional Processes relevant for Alpha-methyl-styrol and Alpha-methyl-styrol containing products					Dermal Exposure						
No	Use Descriptor (PROCs)	SU 3 / SU 22	Contributing Scenario	Operational Conditions & typical RMMs	TRA Predicted Dermal exposure (mg/kg/d) - no modifiers	TRA Dermal exposure LEV reduction factor	TRA concentration factor	PPE factor	extra exposure modifier: [optional]	Free text - comment to clarify additional modifier (dermal)	Predicted Dermal Exposure (mg/kg/d) - modified
1	PROC 1 - Use in closed process, no likelihood of exposure	Professional - SU21	General exposures (closed systems) [CS15].	(closed systems) [CS107].; Process sampling [CS2]. ;	0.34						0.34
3	PROC 2 - Use in closed, continuous process with occasional controlled exposure	Professional - SU22	General exposures (closed systems) [CS15].	Continuous process [CS54]. ; Process sampling [CS2].	1.37						1.37
4	PROC 4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Professional - SU22	Process sampling [CS2]. ; (open systems) [CS108]	with local exhaust ventilation [CS109]	6.86	0.1					0.69
4	PROC 4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Professional - SU22	Process sampling [CS2]. ; (open systems) [CS108]		6.86						6.86
4	PROC 5 -Mixing or blending in batch processes (multistage and/or significant contact)	Professional - SU22	Mixing operations (open systems) [CS30].	Batch process [CS55]. ; Process sampling [CS2]. ; with local exhaust ventilation [CS109]	13.71	0.005					0.07
4	PROC 5 -Mixing or blending in batch processes (multistage and/or significant contact)	Professional - SU22	Mixing operations (open systems) [CS30].	Batch process [CS55]. ; Process sampling [CS2].	13.71						13.71
4	PROC 8a -Transfer of chemicals from/to vessels/ large containers at non dedicated facilities	Professional - SU22	Bulk transfers [CS14].	Non-dedicated facility [CS82]; Transfer from/pouring from containers [CS22]. ; with local exhaust ventilation [CS109]	13.71	0.01					0.14
5	PROC 8a -Transfer of chemicals from/to vessels/ large containers at non dedicated facilities	Professional - SU22	Bulk transfers [CS14].	Non-dedicated facility [CS82]; Transfer from/pouring from containers [CS22].	13.71						13.71
6	PROC 8b -Transfer of chemicals from/to vessels/ large containers at dedicated facilities	Professional - SU23	Bulk transfers [CS14].	Dedicated facility [CS81]; Transfer from/pouring from containers [CS22]. ; with local exhaust ventilation [CS109]	6.86	0.1					0.69
7	PROC 8b -Transfer of chemicals from/to vessels/ large containers at dedicated facilities	Professional - SU24	Bulk transfers [CS14].	Dedicated facility [CS81]; Transfer from/pouring from containers [CS22].	6.86						6.86
8	PROC 10 - Roller application or brushing	Professional - SU22	Rolling, Brushing [CS51].	with local exhaust ventilation [CS109]	27.43	0.05					1.37
9	PROC 10 - Roller application or brushing	Professional - SU22	Equipment cleaning and maintenance [CS39].		27.43		1-5%				5.49
10	PROC 11 - Non industrial spraying	Professional - SU23	Spraying [CS10].	with local exhaust ventilation [CS109]	107.14	0.02					2.14

Generic Exposure Scenario: Professional Processes relevant for Alpha-methyl-styrol and Alpha-methyl-styrol containing products					Dermal Exposure						
No	Use Descriptor (PROCs)	SU 3 / SU 22	Contributing Scenario	Operational Conditions & typical RMMs	TRA Predicted Dermal exposure (mg/kg/d) - no modifiers	TRA Dermal exposure LEV reduction factor	TRA concentration factor	PPE factor	extra exposure modifier: [optional]	Free text - comment to clarify additional modifier (dermal)	Predicted Dermal Exposure (mg/kg/d) - modified
10	PROC 11 - Non industrial spraying	Professional - SU23	Spraying [CS10].		107.14			gloves-basic training			10.71
10	PROC 14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation	Professional - SU22	Production or preparation or articles by tableting, compression, extrusion or pelletisation [CS100]	with local exhaust ventilation [CS109]	3.43	0.1					0.34
11	PROC 14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation	Professional - SU22	Production or preparation or articles by tableting, compression, extrusion or pelletisation [CS100]		3.43		5-25%				2.06
11	PROC 14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation	Professional - SU22	Production or preparation or articles by tableting, compression, extrusion or pelletisation [CS100]		3.43						3.43
12	PROC 15 - Use of laboratory reagents in small scale laboratories	Professional - SU22	Laboratory activities [CS36].	with local exhaust ventilation [CS109]	0.34	0.1					0.03
12	PROC 19 - Hand-mixing with intimate contact (only PPE available)	Professional - SU23		occasional exposure @ temp < 90 °C = medium volatility	141.43			gloves-basic training			14.14

Generic Exposure Scenario:		Professional Processes relevant for Alpha-methyl-styrol and Alpha-methyl-styrol containing products				Risk Characterization		
No	Use Descriptor (PROCs)	SU 3 / SU 22	Contributing Scenario	Operational Conditions & typical RMMs		RCR (inhalation)	RCR (dermal)	RCR (all routes)
1	PROC 1 - Use in closed process, no likelihood of exposure	Professional - SU21	General exposures (closed systems) [CS15].	(closed systems) [CS107].; Process sampling [CS2]. ;		0.000	0.01	0.01
3	PROC 2 - Use in closed, continuous process with occasional controlled exposure	Professional - SU22	General exposures (closed systems) [CS15].	Continuous process [CS54]. ; Process sampling [CS2].	occasional exposure @ temp < 90 °C = medium volatility	0.40	0.04	0.44
4	PROC 4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Professional - SU22	Process sampling [CS2]. ; (open systems) [CS108]	with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility	0.20	0.02	0.22
4	PROC 4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Professional - SU22	Process sampling [CS2]. ; (open systems) [CS108]		occasional exposure @ temp < 90 °C = medium volatility	0.60	0.18	0.78
4	PROC 5 -Mixing or blending in batch processes (multistage and/or significant contact)	Professional - SU22	Mixing operations (open systems) [CS30].	Batch process [CS55]. ; Process sampling [CS2]. ; with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility	0.40	0.00	0.40
4	PROC 5 -Mixing or blending in batch processes (multistage and/or significant contact)	Professional - SU22	Mixing operations (open systems) [CS30].	Batch process [CS55]. ; Process sampling [CS2].	occasional exposure @ temp < 90 °C = medium volatility	0.40	0.36	0.76
4	PROC 8a -Transfer of chemicals from/to vessels/ large containers at non dedicated facilities	Professional - SU22	Bulk transfers [CS14].	Non-dedicated facility [CS82]; Transfer from/pouring from containers [CS22]. ; with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility	0.40	0.00	0.40
5	PROC 8a -Transfer of chemicals from/to vessels/ large containers at non dedicated facilities	Professional - SU22	Bulk transfers [CS14].	Non-dedicated facility [CS82]; Transfer from/pouring from containers [CS22].	occasional exposure @ temp < 90 °C = medium volatility	0.40	0.361	0.76
6	PROC 8b -Transfer of chemicals from/to vessels/ large containers at dedicated facilities	Professional - SU23	Bulk transfers [CS14].	Dedicated facility [CS81]; Transfer from/pouring from containers [CS22]. ; with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility	0.10	0.02	0.12
7	PROC 8b -Transfer of chemicals from/to vessels/ large containers at dedicated facilities	Professional - SU24	Bulk transfers [CS14].	Dedicated facility [CS81]; Transfer from/pouring from containers [CS22].	occasional exposure @ temp < 90 °C = medium volatility	0.60	0.18	0.78
8	PROC 10 - Roller application or brushing	Professional - SU22	Rolling, Brushing [CS51].	with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility	0.40	0.04	0.44

Generic Exposure Scenario: Professional Prozesses relevant for Alpha-methyl-styrol and Alpha-methyl-styrol containing products					Risk Characterization			
No	Use Descriptor (PROCs)	SU 3 / SU 22	Contributing Scenario	Operational Conditions & typical RMMs	RCR (inhalation)	RCR (dermal)	RCR (all routes)	
9	PROC 10 - Roller application or brushing	Professional - SU22	Equipment cleaning and maintenance [CS39].		occasional exposure @ temp < 90 °C = medium volatility	0.40	0.14	0.54
10	PROC 11 - Non industrial spraying	Professional - SU23	Spraying [CS10].	with local exhaust ventilation [CS109]		0.40	0.06	0.46
10	PROC 11 - Non industrial spraying	Professional - SU23	Spraying [CS10].			0.60	0.28	0.88
10	PROC 14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation	Professional - SU22	Production or preparation or articles by tableting, compression, extrusion or pelletisation [CS100]	with local exhaust ventilation [CS109]		0.40	0.01	0.41
11	PROC 14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation	Professional - SU22	Production or preparation or articles by tableting, compression, extrusion or pelletisation [CS100]			0.72	0.05	0.77
11	PROC 14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation	Professional - SU22	Production or preparation or articles by tableting, compression, extrusion or pelletisation [CS100]			0.40	0.09	0.49
12	PROC 15 - Use of laboratory reagents in small scale laboratories	Professional - SU22	Laboratory activities [CS36].	with local exhaust ventilation [CS109]	occasional exposure @ temp < 90 °C = medium volatility	0.04	0.00	0.04
12	PROC 19 - Hand-mixing with intimate contact (only PPE available)	Professional - SU23			occasional exposure @ temp < 90 °C = medium volatility	0.40	0.37	0.77