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1. Short title of exposure scenario

Distribution of substance

SU3; ERC1, ERC2; PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC15

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC1: Manufacture of substances As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Contributing exposure scenario	
Use descriptors covered	ERC2: Formulation of preparations As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Contributing exposure scenario	
Use descriptors covered	PROC1: Use in closed process, no likelihood of exposure. Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Provide basic employee training to	

prevent/minimize exposures.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ESIG GES tool, Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	
http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3	

Contributing exposure scenario	
Use descriptors covered	PROC2: Use in closed, continuous process with occasional controlled exposure. Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Provide basic employee training to prevent/minimize exposures.	
Handle substance within a predominantly closed system provided with extract ventilation.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.

Additional good practice advice

Use suitable chemically resistant gloves. Ensure material transfers are under containment or extract ventilation Clear spills immediately

Guidance to Downstream Users

For scaling see: <http://www.ecetoc.org/tra>

Contributing exposure scenario

Use descriptors covered	PROC3: Use in closed batch process (synthesis or formulation). Use domain: industrial
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Operational conditions

Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor

Risk Management Measures

Provide basic employee training to prevent/minimize exposures.	
Formulate in enclosed or ventilated mixing vessels	

Exposure estimate and reference to its source

Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.

Additional good practice advice

Ensure material transfers are under containment or extract ventilation Use suitable chemically resistant gloves.

Guidance to Downstream Users

For scaling see: <http://www.ecetoc.org/tra>

Contributing exposure scenario

Use descriptors covered	PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises. Use domain: industrial
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Operational conditions

Concentration of the substance	.gamma.-Butyrolactone
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	Content: $\geq 0\%$ - $\leq 100\%$
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Clear transfer lines prior to de-coupling	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable eye protection. Use suitable chemically resistant gloves. Provide a suitable local exhaust ventilation. Avoid manual contact with wet work pieces	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC8a: Transfer of substance or preparation (charging/discharging) from/to ves-sels/large containers at non-dedicated facilities Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: $\geq 0\%$ - $\leq 100\%$
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Ensure equipment drained prior to maintenance. Apply vessel entry procedures including use of forced supplied air. Fill containers/cans at dedicated filling points supplied with LEV	

Wear suitable coveralls to prevent exposure to the skin. Use suitable chemically resistant gloves. Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Ensure material transfers are under containment or extract ventilation Retain drain downs in sealed storage pending disposal or for subsequent recycle.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Handle substance within closed system. Use drum pumps.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.

Additional good practice advice

Ensure material transfers are under containment or extract ventilation Use suitable chemically resistant gloves. Use suitable eye protection. Clear transfer lines prior to de-coupling

Guidance to Downstream Users

For scaling see: <http://www.ecetoc.org/tra>

Contributing exposure scenario

Use descriptors covered	PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing). Use domain: industrial
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Operational conditions

Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor

Risk Management Measures

Use container to collect drips.

Exposure estimate and reference to its source

Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.

Additional good practice advice

Use suitable chemically resistant gloves. Use suitable eye protection. Ensure material transfers are under containment or extract ventilation Clear spills immediately

Guidance to Downstream Users

For scaling see: <http://www.ecetoc.org/tra>

Contributing exposure scenario

Use descriptors covered	PROC15: Use a laboratory reagent. Use domain: industrial
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Operational conditions

Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance	0.344 hPa

during use	
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Avoid manual contact with wet work pieces	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves. Provide a suitable local exhaust ventilation.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

2. Short title of exposure scenario

Formulation & (re)packing of substances and mixtures

SU3; ERC2; PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC14, PROC15

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC2: Formulation of preparations As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

Contributing exposure scenario	
Use descriptors covered	PROC1: Use in closed process, no likelihood of exposure. Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week

Indoor/Outdoor	Indoor
Risk Management Measures	
Provide basic employee training to prevent/minimize exposures.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ESIG GES tool, Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	
http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3	

Contributing exposure scenario	
Use descriptors covered	PROC2: Use in closed, continuous process with occasional controlled exposure. Storage Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Store substance within a closed system.	
Ensure operation is undertaken outdoors.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ESIG GES tool, Worker
	Worker - dermal, long-term - systemic

	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves. Provide a good standard of controlled ventilation (10 to 15 air changes per hour) Avoid dip sampling. Clear transfer lines prior to de-coupling	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	
http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3	

Contributing exposure scenario	
Use descriptors covered	PROC3: Use in closed batch process (synthesis or formulation). Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Provide basic employee training to prevent/minimize exposures.	
Formulate in enclosed or ventilated mixing vessels	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Ensure material transfers are under containment or extract ventilation Use suitable chemically resistant gloves.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises.

	Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Clear transfer lines prior to de-coupling	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable eye protection. Use suitable chemically resistant gloves. Provide a suitable local exhaust ventilation. Avoid manual contact with wet work pieces	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact). Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker

	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ESIG GES tool, Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves. Ensure material transfers are under containment or extract ventilation Provide a suitable local exhaust ventilation. Clear transfer lines prior to de-coupling Avoid manual contact with wet work pieces	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	
http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3	

Contributing exposure scenario	
Use descriptors covered	PROC8a: Transfer of substance or preparation (charging/discharging) from/to ves-sels/large containers at non-dedicated facilities Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Ensure equipment drained prior to maintenance. Apply vessel entry procedures including use of forced supplied air. Fill containers/cans at dedicated filling points supplied with LEV	
Wear suitable coveralls to prevent exposure to the skin. Use suitable chemically resistant gloves. Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker

	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Ensure material transfers are under containment or extract ventilation Retain drain downs in sealed storage pending disposal or for subsequent recycle.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Handle substance within closed system. Use drum pumps.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Ensure material transfers are under containment or extract ventilation Use suitable chemically resistant gloves. Use suitable eye protection. Clear transfer lines prior to de-coupling	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing). Use domain: industrial

Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use container to collect drips.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves. Use suitable eye protection. Ensure material transfers are under containment or extract ventilation Clear spills immediately	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC14: Production of preparations or articles by tableting, compression, extrusion, pelettisation. Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use drum pumps.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk

	management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves. Provide a suitable local exhaust ventilation. Use suitable eye protection.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC15: Use a laboratory reagent. Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Avoid manual contact with wet work pieces	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves. Provide a suitable local exhaust ventilation.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

3. Short title of exposure scenario

Use in Coatings
SU3; ERC4; PROC1, PROC2, PROC4, PROC5, PROC7, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15

Control of exposure and risk management measures	
Contributing exposure scenario	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Use descriptors covered	

Contributing exposure scenario	
Use descriptors covered	PROC1: Use in closed process, no likelihood of exposure. Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Provide basic employee training to prevent/minimize exposures.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ESIG GES tool, Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	
http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3	

Contributing exposure scenario	
Use descriptors covered	PROC2: Use in closed, continuous process with occasional controlled exposure. Use domain: industrial

Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Provide basic employee training to prevent/minimize exposures.	
Handle substance within a predominantly closed system provided with extract ventilation.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves. Ensure material transfers are under containment or extract ventilation Clear spills immediately	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises. Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	

Clear transfer lines prior to de-coupling	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable eye protection. Use suitable chemically resistant gloves. Provide a suitable local exhaust ventilation. Avoid manual contact with wet work pieces	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact). Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ESIG GES tool, Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves. Ensure material transfers are under containment or extract ventilation Provide a suitable local exhaust ventilation. Clear transfer lines prior to de-coupling Avoid manual contact with wet work pieces	
Guidance to Downstream Users	

Contributing exposure scenario	
Use descriptors covered	PROC7: Industrial spraying Spraying (automatic/robotic) Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Carry out in a vented booth provided with laminar airflow. Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ESIG GES tool, Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves. Where appropriate, replacement of task by automated and/or closed processes.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	
http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3	

Contributing exposure scenario	
Use descriptors covered	PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %

Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Handle substance within closed system. Use drum pumps.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Ensure material transfers are under containment or extract ventilation Use suitable chemically resistant gloves. Use suitable eye protection. Clear transfer lines prior to de-coupling	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing). Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use container to collect drips.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker

	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied., The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves. Use suitable eye protection. Ensure material transfers are under containment or extract ventilation Clear spills immediately	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC10: Roller application or brushing Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied., The use is assessed to be safe.
Assessment method	ESIG GES tool, Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied., The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves. Provide a suitable local exhaust ventilation. Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	
http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3	

Contributing exposure scenario	
Use descriptors covered	PROC13: Treatment of articles by dipping and pouring. Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %

Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ESIG GES tool, Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves. Provide a suitable local exhaust ventilation. Avoid splashing. Avoid manual contact with wet work pieces	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	
http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3	

Contributing exposure scenario	
Use descriptors covered	PROC14: Production of preparations or articles by tableting, compression, extrusion, pelettisation. Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use drum pumps.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic

	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves. Provide a suitable local exhaust ventilation. Use suitable eye protection.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC15: Use a laboratory reagent. Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Avoid manual contact with wet work pieces	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves. Provide a suitable local exhaust ventilation.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

4. Short title of exposure scenario

Use in Coatings

SU22; ERC8b, ERC8d; PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC10, PROC11, PROC13, PROC15, PROC19

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC8b: Wide dispersive indoor use of reactive substances in open systems As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

Contributing exposure scenario	
Use descriptors covered	ERC8d: Wide dispersive outdoor use of processing aids in open systems As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

Contributing exposure scenario	
Use descriptors covered	PROC1: Use in closed process, no likelihood of exposure. Use domain: professional

Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Store substance within a closed system.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC2: Use in closed, continuous process with

	occasional controlled exposure. Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Store substance within a closed system.	
Handle substance within a predominantly closed system provided with extract ventilation.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves. Ensure material transfers are under containment or extract ventilation	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC3: Use in closed batch process (synthesis or formulation). Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor

Risk Management Measures	
Clean up contamination as soon as they occur.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use drum pumps. Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings. Use suitable chemically resistant gloves. Wear suitable working clothes. Use suitable eye protection.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises. Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Avoid manual contact with wet work pieces	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.

Additional good practice advice

Use suitable eye protection. Local exhaust ventilation and / or general ventilation are / is advisable.
Use suitable chemically resistant gloves.

Guidance to Downstream Users

For scaling see: <http://www.ecetoc.org/tra>

Contributing exposure scenario

Use descriptors covered	PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact). Use domain: professional
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Operational conditions

Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor

Risk Management Measures

Use suitable chemically resistant gloves.	Effectiveness: 80 %
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Exposure estimate and reference to its source

Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied., The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied., The use is assessed to be safe.

Additional good practice advice

Use suitable eye protection. Local exhaust ventilation and / or general ventilation are / is advisable.
Wear suitable working clothes.

Guidance to Downstream Users

For scaling see: <http://www.ecetoc.org/tra>

Contributing exposure scenario

Use descriptors covered	PROC8a: Transfer of substance or preparation (charging/discharging) from/to ves-sels/large containers at non-dedicated facilities Use domain: professional
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Operational conditions

Concentration of the substance	.gamma.-Butyrolactone
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	Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable chemically resistant gloves.	Effectiveness: 80 %
Wear suitable coveralls to prevent exposure to the skin. Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Retain drain downs in sealed storage pending disposal or for subsequent recycle. Local exhaust ventilation and / or general ventilation are / is advisable. Clear transfer lines prior to de-coupling	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC10: Roller application or brushing Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Wear chemically resistant gloves in combination with 'basic' employee training.	Effectiveness: 90 %
Exposure estimate and reference to its source	

Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Local exhaust ventilation and / or general ventilation are / is advisable.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC11: Non industrial spraying Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Carry out in a vented booth or extracted enclosure. Provide extract ventilation to points where emissions occur (LEV).	Effectiveness: 80 %
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ESIG GES tool, Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	
http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3	

Contributing exposure scenario	
Use descriptors covered	PROC11: Non industrial spraying Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Wear chemically resistant gloves in combination with 'basic' employee training. Wear suitable respiratory protection.	Effectiveness: 90 %
Wear suitable coveralls to prevent exposure to the skin.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable eye protection.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC13: Treatment of articles by dipping and pouring. Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week

Indoor/Outdoor	Indoor
Risk Management Measures	
Avoid manual contact with wet work pieces	
Use suitable chemically resistant gloves.	Effectiveness: 80 %
Use suitable eye protection. Wear suitable coveralls to prevent exposure to the skin.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Clear spills immediately Retain drain downs in sealed storage pending disposal or for subsequent recycle. Local exhaust ventilation and / or general ventilation are / is advisable.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC15: Use a laboratory reagent. Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed

	to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves. Local exhaust ventilation and / or general ventilation are / is advisable. Put lids on containers immediately after use.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC19: Hand-mixing with intimate contact and only PPE available. Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Provide enhanced ventilation by mechanical means.	Effectiveness: 70 %
Wear chemically resistant gloves in combination with specific activity training	Effectiveness: 95 %
Ensure doors and windows are opened (general ventilation).	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC19: Hand-mixing with intimate contact and only PPE available. Use domain: professional
Operational conditions	

Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Outdoor
Risk Management Measures	
Wear chemically resistant gloves in combination with specific activity training	Effectiveness: 95 %
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

5. Short title of exposure scenario

Use in Coatings
SU21; ERC8a, ERC8d; PC1, PC9a

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC8a: Wide dispersive indoor use of processing aids in open systems As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Contributing exposure scenario	
Use descriptors covered	ERC8d: Wide dispersive outdoor use of processing aids in open systems As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	SU21: Consumer uses PC1: Adhesives, Sealants, PC1_1: Subcategory: Glues, hobby use, Glues from tubes
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 10 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Exposure estimate and reference to its source	
Assessment method	ConsExpo v4.1
	Consumer - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ConsExpo v4.1
	Consumer - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	SU21: Consumer uses PC1: Adhesives, Sealants, PC1_2: Subcategory: Glues DIY-use (carpet glue, tile glue, wood parquet glue)
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 9 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Exposure estimate and reference to its source	
Assessment method	ConsExpo v4.1
	Consumer - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ConsExpo v4.1
	Consumer - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	SU21: Consumer uses PC1: Adhesives, Sealants, PC1_3: Subcategory: Glue from spray
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 2.5 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Exposure estimate and reference to its source	
Assessment method	ConsExpo v4.1

	Consumer - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ConsExpo v4.1
	Consumer - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	SU21: Consumer uses PC1: Adhesives, Sealants, PC1_4: Subcategory: Sealant, Assembly sealants
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 3 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Exposure estimate and reference to its source	
Assessment method	ConsExpo v4.1
	Consumer - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ConsExpo v4.1
	Consumer - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	SU21: Consumer uses PC1: Adhesives, Sealants, PC1_4: Subcategory: Sealant, Joint sealants
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 10 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Exposure estimate and reference to its source	

Assessment method	ConsExpo v4.1
	Consumer - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ConsExpo v4.1
	Consumer - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	SU21: Consumer uses PC9: Coatings and paints, fillers, putties, thinners., PC9a_4, PC15_4: Subcategory: Removers (paint-, glue-, wall paper-, sealant-remover), Paint remover
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 1.5 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Exposure estimate and reference to its source	
Assessment method	ConsExpo v4.1
	Consumer - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ConsExpo v4.1
	Consumer - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	SU21: Consumer uses PC9: Coatings and paints, fillers, putties, thinners., PC9a_4, PC15_4: Subcategory: Removers (paint-, glue-, wall paper-, sealant-remover), Glue remover
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 1.5 %
Physical state	liquid

Vapour pressure of the substance during use	0.344 hPa
Exposure estimate and reference to its source	
Assessment method	ConsExpo v4.1
	Consumer - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ConsExpo v4.1
	Consumer - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

6. Short title of exposure scenario

Use in Cleaning Agents

SU3; ERC4; PROC1, PROC2, PROC4, PROC7, PROC8b, PROC10, PROC13

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

Contributing exposure scenario	
Use descriptors covered	PROC1: Use in closed process, no likelihood of exposure. Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Provide basic employee training to prevent/minimize exposures.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker

	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ESIG GES tool, Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	
http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3	

Contributing exposure scenario	
Use descriptors covered	PROC2: Use in closed, continuous process with occasional controlled exposure. Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Provide basic employee training to prevent/minimize exposures.	

Handle substance within a predominantly closed system provided with extract ventilation.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves. Ensure material transfers are under containment or extract ventilation Clear spills immediately	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises. Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	Liquid, high fugacity
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
	Operation is carried out at elevated temperature (> 20°C above ambient temperature).
Risk Management Measures	
Provide extract ventilation to points where emissions occur (LEV).	Effectiveness: 90 %
Wear chemically resistant gloves in combination with intensive management supervision control.	Effectiveness: 80 %
Clear transfer lines prior to de-coupling	
Use suitable eye protection. Wear suitable coveralls to prevent exposure to the skin.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.

Additional good practice advice

Clear spills immediately

Guidance to Downstream UsersFor scaling see: <http://www.ecetoc.org/tra>**Contributing exposure scenario**

Use descriptors covered	PROC7: Industrial spraying Use domain: industrial
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Operational conditions

Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor

Risk Management Measures

Wear suitable respiratory protection.	Effectiveness: 90 %
Use suitable chemically resistant gloves.	Effectiveness: 80 %
Use suitable eye protection. Wear suitable coveralls to prevent exposure to the skin.	

Exposure estimate and reference to its source

Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.

Guidance to Downstream UsersFor scaling see: <http://www.ecetoc.org/tra>**Contributing exposure scenario**

Use descriptors covered	PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities Use domain: industrial
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Operational conditions

Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor

Risk Management Measures

Clear transfer lines prior to de-coupling	
Use suitable chemically resistant gloves. Use suitable eye protection.	
Wear suitable coveralls to prevent exposure to the skin.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Clear spills immediately	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC10: Roller application or brushing Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.	
Use suitable chemically resistant gloves.	Effectiveness: 80 %
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed

	to be safe.
Additional good practice advice	
Avoid manual contact with wet work pieces Clear spills immediately Local exhaust ventilation and / or general ventilation are / is advisable.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	
Contributing exposure scenario	
Use descriptors covered	PROC13: Treatment of articles by dipping and pouring. Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ESIG GES tool, Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves. Provide a suitable local exhaust ventilation. Avoid splashing. Avoid manual contact with wet work pieces	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	
http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3	

7. Short title of exposure scenario

Use in Cleaning Agents

SU22; ERC8a, ERC8d; PROC1, PROC2, PROC4, PROC8a, PROC10, PROC11, PROC13

Control of exposure and risk management measures

Contributing exposure scenario	
	ERC8a: Wide dispersive indoor use of processing aids in open systems As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

Contributing exposure scenario	
Use descriptors covered	ERC8d: Wide dispersive outdoor use of processing aids in open systems As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

Contributing exposure scenario	
Use descriptors covered	PROC1: Use in closed process, no likelihood of exposure. Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Store substance within a closed system.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC2: Use in closed, continuous process with occasional controlled exposure. Use domain: professional

Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Store substance within a closed system.	
Handle substance within a predominantly closed system provided with extract ventilation.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves. Ensure material transfers are under containment or extract ventilation	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises. Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Avoid manual contact with wet work	

pieces	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable eye protection. Local exhaust ventilation and / or general ventilation are / is advisable. Use suitable chemically resistant gloves.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC8a: Transfer of substance or preparation (charging/discharging) from/to ves-sels/large containers at non-dedicated facilities Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable chemically resistant gloves.	Effectiveness: 80 %
Wear suitable coveralls to prevent exposure to the skin. Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.

Additional good practice advice

Retain drain downs in sealed storage pending disposal or for subsequent recycle. Local exhaust ventilation and / or general ventilation are / is advisable. Clear transfer lines prior to de-coupling

Guidance to Downstream Users

For scaling see: <http://www.ecetoc.org/tra>

Contributing exposure scenario	
Use descriptors covered	PROC10: Roller application or brushing Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable chemically resistant gloves.	Effectiveness: 80 %
Wear suitable coveralls to prevent exposure to the skin. Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Put lids on containers immediately after use. Use of suitable respiratory protection is recommended.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC11: Non industrial spraying Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %

Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Wear chemically resistant gloves in combination with 'basic' employee training. Wear suitable respiratory protection.	Effectiveness: 90 %
Wear suitable coveralls to prevent exposure to the skin.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable eye protection.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC13: Treatment of articles by dipping and pouring. Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Avoid manual contact with wet work pieces	
Use suitable chemically resistant gloves.	Effectiveness: 80 %
Use suitable eye protection. Wear suitable coveralls to prevent exposure to the skin.	

Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Clear spills immediately Retain drain downs in sealed storage pending disposal or for subsequent recycle. Local exhaust ventilation and / or general ventilation are / is advisable.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

8. Short title of exposure scenario

Use in Cleaning Agents
SU21; ERC8a, ERC8d; PC35

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC8a: Wide dispersive indoor use of processing aids in open systems As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Contributing exposure scenario	
Use descriptors covered	ERC8d: Wide dispersive outdoor use of processing aids in open systems As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Contributing exposure scenario	
Use descriptors covered	SU21: Consumer uses PC35: Washing and Cleaning Products (including solvent based products), Metal cleaners
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 90 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Exposure estimate and reference to its source	
Assessment method	ConsExpo v4.1
	Consumer - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ConsExpo v4.1

	Consumer - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

9. Short title of exposure scenario

Use as Binders and Release agents

SU3; ERC4; PROC1, PROC2, PROC3, PROC4, PROC6, PROC7, PROC8b, PROC10, PROC14

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

Contributing exposure scenario	
Use descriptors covered	PROC1: Use in closed process, no likelihood of exposure. Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Provide basic employee training to	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ESIG GES tool, Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	
http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3	

Contributing exposure scenario	
Use descriptors covered	PROC2: Use in closed, continuous process with occasional controlled exposure. Storage Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Store substance within a closed system.	
Ensure operation is undertaken outdoors.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ESIG GES tool, Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves. Provide a good standard of controlled ventilation (10 to 15 air changes per hour) Avoid dip sampling. Clear transfer lines prior to de-coupling	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	
http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3	

Contributing exposure scenario	
Use descriptors covered	PROC3: Use in closed batch process (synthesis or formulation). Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa

Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Provide basic employee training to prevent/minimize exposures.	
Formulate in enclosed or ventilated mixing vessels	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Ensure material transfers are under containment or extract ventilation Use suitable chemically resistant gloves.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises. Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Clear transfer lines prior to de-coupling	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker

	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable eye protection. Use suitable chemically resistant gloves. Provide a suitable local exhaust ventilation. Avoid manual contact with wet work pieces	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC6: Calendring operations Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	Liquid, moderate fugacity
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
	Operation is carried out at elevated temperature (> 20°C above ambient temperature).
Risk Management Measures	
Provide extract ventilation to points where emissions occur (LEV).	Effectiveness: 90 %
Provide a good standard of controlled ventilation (10 to 15 air changes per hour)	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable eye protection. Use suitable chemically resistant gloves.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC7: Industrial spraying Spraying (automatic/robotic) Use domain: industrial

Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Carry out in a vented booth provided with laminar airflow. Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ESIG GES tool, Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves. Where appropriate, replacement of task by automated and/or closed processes.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	
http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3	

Contributing exposure scenario	
Use descriptors covered	PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	

Handle substance within closed system. Use drum pumps.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Ensure material transfers are under containment or extract ventilation Use suitable chemically resistant gloves. Use suitable eye protection. Clear transfer lines prior to de-coupling	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC10: Roller application or brushing Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.	
Use suitable chemically resistant gloves.	Effectiveness: 80 %
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk

	management measures are applied., The use is assessed to be safe.
Additional good practice advice	
Avoid manual contact with wet work pieces Clear spills immediately Local exhaust ventilation and / or general ventilation are / is advisable.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC14: Production of preparations or articles by tableting, compression, extrusion, pelettisation. Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use drum pumps.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied., The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied., The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves. Provide a suitable local exhaust ventilation. Use suitable eye protection.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

10. Short title of exposure scenario

Use as Binders and Release agents

SU22; ERC8a, ERC8b, ERC8c, ERC8d, ERC8e, ERC8f; PROC1, PROC2, PROC3, PROC4, PROC6, PROC8b, PROC10, PROC11, PROC14

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC8a: Wide dispersive indoor use of processing aids in open systems As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

Contributing exposure scenario	
Use descriptors covered	ERC8b: Wide dispersive indoor use of reactive substances in open systems As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

Contributing exposure scenario	
Use descriptors covered	ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

Contributing exposure scenario	
Use descriptors covered	ERC8d: Wide dispersive outdoor use of processing aids in open systems As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

Contributing exposure scenario	
Use descriptors covered	ERC8e: Wide dispersive outdoor use of reactive substances in open systems As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

Contributing exposure scenario	
Use descriptors covered	ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
	ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix As no environmental hazard was identified no environmental-related exposure assessment and risk

	characterization was performed.
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Contributing exposure scenario	
Use descriptors covered	PROC1: Use in closed process, no likelihood of exposure. Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Store substance within a closed system.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC2: Use in closed, continuous process with occasional controlled exposure. Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week

Indoor/Outdoor	Indoor
Risk Management Measures	
Store substance within a closed system.	
Handle substance within a predominantly closed system provided with extract ventilation.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves. Ensure material transfers are under containment or extract ventilation	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC3: Use in closed batch process (synthesis or formulation). Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Clean up contamination as soon as they occur.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic

	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use drum pumps. Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings. Use suitable chemically resistant gloves. Wear suitable working clothes. Use suitable eye protection.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises. Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Avoid manual contact with wet work pieces	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable eye protection. Local exhaust ventilation and / or general ventilation are / is advisable. Use suitable chemically resistant gloves.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC6: Calendering operations Use domain: professional
Operational conditions	

Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	Liquid, moderate fugacity
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
	Operation is carried out at elevated temperature (> 20°C above ambient temperature).
Risk Management Measures	
Provide extract ventilation to points where emissions occur (LEV).	Effectiveness: 80 %
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable eye protection. Use suitable chemically resistant gloves.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.

Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves. Use suitable eye protection.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC10: Roller application or brushing Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Wear chemically resistant gloves in combination with 'basic' employee training.	Effectiveness: 90 %
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Local exhaust ventilation and / or general ventilation are / is advisable.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC11: Non industrial spraying Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone

	Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Carry out in a vented booth or extracted enclosure. Provide extract ventilation to points where emissions occur (LEV).	Effectiveness: 80 %
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ESIG GES tool, Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	
http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3	

Contributing exposure scenario	
Use descriptors covered	PROC11: Non industrial spraying Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Wear chemically resistant gloves in combination with 'basic' employee training. Wear suitable respiratory protection.	Effectiveness: 90 %
Wear suitable coveralls to prevent exposure to the skin.	

Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable eye protection.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC11: Non industrial spraying With potential for aerosol generation Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Carry out in a vented booth or extracted enclosure.	Effectiveness: 80 %
Wear suitable respiratory protection.	Effectiveness: 90 %
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable eye protection. Use suitable chemically resistant gloves.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC14: Production of preparations or articles by tableting, compression, extrusion, pelettisation. Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

11. Short title of exposure scenario

Use in Plant protection products

SU22; ERC8a, ERC8d; PROC1, PROC4, PROC8a, PROC8b, PROC11, PROC13

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC8a: Wide dispersive indoor use of processing aids in open systems As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Contributing exposure scenario	
Use descriptors covered	ERC8d: Wide dispersive outdoor use of processing aids in open systems As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

Contributing exposure scenario	
Use descriptors covered	PROC1: Use in closed process, no likelihood of exposure. Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Store substance within a closed system.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises. Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week

Indoor/Outdoor	Indoor
Risk Management Measures	
Avoid manual contact with wet work pieces	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable eye protection. Local exhaust ventilation and / or general ventilation are / is advisable. Use suitable chemically resistant gloves.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC8a: Transfer of substance or preparation (charging/discharging) from/to ves-sels/large containers at non-dedicated facilities Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable chemically resistant gloves.	Effectiveness: 80 %
Wear suitable coveralls to prevent exposure to the skin. Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.

Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Retain drain downs in sealed storage pending disposal or for subsequent recycle. Local exhaust ventilation and / or general ventilation are / is advisable. Clear transfer lines prior to de-coupling	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves. Use suitable eye protection.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC11: Non industrial spraying Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %

Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Wear chemically resistant gloves in combination with 'basic' employee training. Wear suitable respiratory protection.	Effectiveness: 90 %
Wear suitable coveralls to prevent exposure to the skin.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable eye protection.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC11: Non industrial spraying Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Apply within a vented cab supplied with filtered air under positive pressure	Effectiveness: 95 %
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker

	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ESIG GES tool, Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	
http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3	

Contributing exposure scenario	
Use descriptors covered	PROC13: Treatment of articles by dipping and pouring. Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Avoid manual contact with wet work pieces	
Use suitable chemically resistant gloves.	Effectiveness: 80 %
Use suitable eye protection. Wear suitable coveralls to prevent exposure to the skin.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Clear spills immediately Retain drain downs in sealed storage pending disposal or for subsequent	

recycle. Local exhaust ventilation and / or general ventilation are / is advisable.

Guidance to Downstream Users

For scaling see: <http://www.ecetoc.org/tra>

12. Short title of exposure scenario

Use in Plant protection products

SU21; ERC8a, ERC8d; PC27

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC8a: Wide dispersive indoor use of processing aids in open systems As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Contributing exposure scenario	
Use descriptors covered	ERC8d: Wide dispersive outdoor use of processing aids in open systems As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Contributing exposure scenario	
Use descriptors covered	SU21: Consumer uses PC27: Plant Protection products., Metal cleaners
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 12 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Exposure estimate and reference to its source	
Assessment method	ConsExpo v4.1
	Consumer - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ConsExpo v4.1
	Consumer - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

13. Short title of exposure scenario

Use in Printing inks
SU21; ERC8a; PC18

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC8a: Wide dispersive indoor use of processing aids in open systems As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

Contributing exposure scenario	
Use descriptors covered	SU21: Consumer uses PC18: Ink and Toners.
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 15 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Exposure estimate and reference to its source	
Assessment method	ConsExpo v4.1
	Consumer - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ConsExpo v4.1
	Consumer - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

14. Short title of exposure scenario

Use in laboratories
SU3; ERC4; PROC10, PROC15

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

Contributing exposure scenario	
Use descriptors covered	PROC10: Roller application or brushing Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.	
Use suitable chemically resistant gloves.	Effectiveness: 80 %
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied., The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied., The use is assessed to be safe.
Additional good practice advice	
Avoid manual contact with wet work pieces Clear spills immediately Local exhaust ventilation and / or general ventilation are / is advisable.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC15: Use a laboratory reagent. Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa

Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Avoid manual contact with wet work pieces	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves. Provide a suitable local exhaust ventilation.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

15. Short title of exposure scenario

Use in laboratories
SU22; ERC8a; PROC10, PROC15

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC8a: Wide dispersive indoor use of processing aids in open systems As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

Contributing exposure scenario	
Use descriptors covered	PROC10: Roller application or brushing Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week

Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable chemically resistant gloves.	Effectiveness: 80 %
Wear suitable coveralls to prevent exposure to the skin. Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Put lids on containers immediately after use. Use of suitable respiratory protection is recommended.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC15: Use a laboratory reagent. Use domain: professional
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves. Local exhaust ventilation and / or general ventilation are /	

is advisable. Put lids on containers immediately after use.

Guidance to Downstream Users

For scaling see: <http://www.ecetoc.org/tra>

16. Short title of exposure scenario

Polymer production

SU3; SU10; ERC6a, ERC6c; PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Contributing exposure scenario	
Use descriptors covered	ERC6c: Industrial use of monomers for manufacture of thermoplastics As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Contributing exposure scenario	
Use descriptors covered	PROC1: Use in closed process, no likelihood of exposure. Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Provide basic employee training to prevent/minimize exposures.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied., The use is assessed to be safe.

Assessment method	ESIG GES tool, Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	
http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3	

Contributing exposure scenario	
Use descriptors covered	PROC2: Use in closed, continuous process with occasional controlled exposure. Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Provide basic employee training to prevent/minimize exposures.	
Handle substance within a predominantly closed system provided with extract ventilation.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable chemically resistant gloves. Ensure material transfers are under containment or extract ventilation Clear spills immediately	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario

Use descriptors covered	PROC3: Use in closed batch process (synthesis or formulation). Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Provide basic employee training to prevent/minimize exposures.	
Formulate in enclosed or ventilated mixing vessels	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied., The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied., The use is assessed to be safe.
Additional good practice advice	
Ensure material transfers are under containment or extract ventilation Use suitable chemically resistant gloves.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises. Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor

Risk Management Measures	
Clear transfer lines prior to de-coupling	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Use suitable eye protection. Use suitable chemically resistant gloves. Provide a suitable local exhaust ventilation. Avoid manual contact with wet work pieces	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact). Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable chemically resistant gloves.	Effectiveness: 80 %
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.

Additional good practice advice

Use suitable eye protection. Provide a suitable local exhaust ventilation. Wear suitable working clothes.

Guidance to Downstream Users

For scaling see: <http://www.ecetoc.org/tra>

Contributing exposure scenario	
Use descriptors covered	PROC8a: Transfer of substance or preparation (charging/discharging) from/to ves-sels/large containers at non-dedicated facilities Use domain: industrial
Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Ensure equipment drained prior to maintenance.	
Use suitable chemically resistant gloves.	Effectiveness: 80 %
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Ensure material transfers are under containment or extract ventilation Retain drain downs in sealed storage pending disposal or for subsequent recycle.	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities Use domain: industrial

Operational conditions	
Concentration of the substance	.gamma.-Butyrolactone Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Duration and Frequency of activity	Application duration: 480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Handle substance within closed system. Use drum pumps.	
Exposure estimate and reference to its source	
Assessment method	ECETOC TRA v2.0 Worker
	Worker - inhalative, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Assessment method	ECETOC TRA v2.0 Worker
	Worker - dermal, long-term - systemic
	In case the identified operational conditions and risk management measures are applied:, The use is assessed to be safe.
Additional good practice advice	
Ensure material transfers are under containment or extract ventilation Use suitable chemically resistant gloves. Use suitable eye protection. Clear transfer lines prior to de-coupling	
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

17. Short title of exposure scenario

Use in Batteries

SU21; ERC10a, ERC11a; AC3-2

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC10a:Wide dispersive outdoor use of long-life articles and materials with low release As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Contributing exposure scenario	
Use descriptors covered	ERC11:Wide dispersive indoor use of long-life articles and materials with low release As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

Contributing exposure scenario	
Use descriptors covered	SU21: Consumer uses AC3: Electrical batteries and accumulators
Operational conditions	
Physical state	liquid
Vapour pressure of the substance during use	0.344 hPa
Exposure estimate and reference to its source	
	Consumer - inhalative, long-term - systemic
	Exposure is considered negligible.
	Consumer - dermal, long-term - systemic
	Exposure is considered negligible.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	
