








		ACIDO LACTICO COMESTIVEL Código : F4003																											
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SECÇÃO 1: IDENTIFICAÇÃO DA SUBSTÂNCIA/MISTURA E DA SOCIEDADE/EMPRESA																													
1.1	DENTIFICADOR DO PRODUTO: ACIDO LACTICO COMESTIVEL Código: F4003 (CAS: 79-33-4 EC: 201-196-2) UFI: 837R-3XTP-QXQM-CJVY REGISTO REACH: Nome de registo: L-(+)-lactic acid Número de registo: 01-2119474164-39																												
1.2	UTILIZAÇÕES IDENTIFICADAS RELEVANTES DA SUBSTÂNCIA OU MISTURA E UTILIZAÇÕES DESACONSELHADAS: Utilizações previstas (principais funções técnicas): <input checked="" type="checkbox"/> Industrial <input checked="" type="checkbox"/> Profissional <input type="checkbox"/> Consumo Produto químico. Utilização em produtos (categorias de produto relevantes): Colas, vedantes (PC1). Adsorventes (PC2). Produtos de limpeza do ar (PC3). Produtos anticongelantes e de descongelamento (PC4). Produtos biocidas (PC8). Materiais de revestimento e tintas, diluentes, decapantes (PC9a). Materiais de enchimento, mástiques, gessos, argila para modelar (PC9b). Tintas para pintar com os dedos (PC9c). Fertilizantes (PC12). Combustíveis (PC13). Produtos de tratamento de superfícies metálicas (PC14). Produtos de tratamento de superfícies não metálicas (PC15). Fluidos hidráulicos (PC17). Produtos intermédios (PC19). Produtos tais com reguladores do pH, floculantes, precipitantes, agentes de neutralização (PC20). Produtos químicos de laboratório (PC21). Lubrificantes, massas lubrificantes e produtos de libertação (PC24). Fluidos para o trabalho de metais (PC25). Perfumes, fragrâncias (PC28). Produtos farmacêuticos (PC29). Graxas/produtos de polimento e misturas de ceras (PC31). Preparações e misturas de polímeros (PC32). Produtos de lavagem e de limpeza (PC35). Produtos químicos para tratamento de águas (PC37). Produtos para soldadura e brasagem fraca (PC38). Produtos cosméticos, produtos de higiene pessoal (PC39). Tipos de uso PCN: Reagentes e produtos químicos para laboratório. Utilização em artigos (categorias de artigo relevantes): Veículos (AC1). Utilizações desaconselhadas: Este produto não é recomendado para qualquer utilização ou sector de uso industrial, profissional ou de consumo diferentes aos anteriormente listados como "Utilizações previstas ou identificadas". Restrições ao fabrico, à colocação no mercado e à utilização, Anexo XVII do Regulamento (CE) nº 1907/2006: Não restrito.																												
1.3	IDENTIFICAÇÃO DO FORNECEDOR DA FICHA DE DADOS DE SEGURANÇA: SOCIEDADE PORTUENSE DE DROGAS, S.A. Rua da Cavada, nº 550 - S.Cosme - 4424-909 Gondomar ESPAÑA Telefone: +351 224660600 - www.grupospd.pt - Endereço electrónico da pessoa responsável pela ficha de dados de segurança: geral@grupospd.pt																												
1.4	NUMERO DE TELEFONE DE EMERGÊNCIA: +351 224660600 8:00-18:00 h  Centro de Informação Antivenenos (Portugal) - Telefone de urgência em caso de intoxicação: (+351) 800 250 250 (24h/365d) - Em alternativa ligue 112 (Número europeu de emergência) Centros de toxicologia PORTUGAL: · Centro de Informação Antivenenos (CIAV) - Instituto Nacional de Emergencia Medica (INEM) - Rua Almirante Barroso, 36 - 1000-013 Lisboa - Telefone (Secretariado): +351 213 303 271 Telefone de urgência: 800 250 250																												
SECÇÃO 2: IDENTIFICAÇÃO DOS PERIGOS																													
2.1	CLASSIFICAÇÃO DA SUBSTÂNCIA OU MISTURA: A classificação como corrosivo realizou-se tendo em consideração o critério da corrosividade por pH < 2. Classificação de acordo com o Regulamento (UE) nº 1272/2008~2021/849 (CLP): PERIGO:Skin Corr. 1C:H314 EUH071 Skin. Corr. 1:H314																												
<table><tr><th>Classe de perigo</th><th>Classificação da substância</th><th>Cat.</th><th>Vias de exposição</th><th>Orgãos-alvo</th><th>Efeitos</th></tr><tr><td>Físico-químico: Não classificado</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Saúde humana:</td><td> Skin Corr. 1C:H314 EUH071 Skin. Corr. 1:H314</td><td>Cat.1C -</td><td>Pele Inalação -</td><td>Pele Vias respiratórias -</td><td>Irritação Corrosão -</td></tr><tr><td>Meio ambiente: Não classificado</td><td></td><td></td><td></td><td></td><td></td></tr></table>						Classe de perigo	Classificação da substância	Cat.	Vias de exposição	Orgãos-alvo	Efeitos	Físico-químico: Não classificado						Saúde humana:	 Skin Corr. 1C:H314 EUH071 Skin. Corr. 1:H314	Cat.1C -	Pele Inalação -	Pele Vias respiratórias -	Irritação Corrosão -	Meio ambiente: Não classificado					
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Meio ambiente: Não classificado																													
O texto completo das advertências de perigo mencionadas é indicado na seção 16.																													
2.2	ELEMENTOS DO RÓTULO:  O produto é etiquetado com a palavra-sinal PERIGO de acordo o Regulamento (UE) nº 1272/2008~2021/849 (CLP) - Advertências de perigo: H314 Provoca queimaduras na pele e lesões oculares graves.																												

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	EUH071	Corrosivo para as vias respiratórias.	
	- Recomendações de prudência:		
	P102-P405	Manter fora do alcance das crianças. Armazenar em local fechado à chave.	
	P280	Usar luvas de protecção, vestuário de protecção e protecção ocular. Em caso de ventilação inadequada, usar protecção respiratória.	
	P363	Lavar a roupa contaminada antes de a voltar a usar.	
	P301+P310-P330+P331	EM CASO DE INGESTÃO: Contacte imediatamente um CENTRO DE INFORMAÇÃO ANTIVENENOS ou um médico. Enxaguar a boca. NÃO provocar o vômito.	
	P303+P361+P353-P352-P312	SE ENTRAR EM CONTACTO COM A PELE (ou o cabelo): Retirar imediatamente toda a roupa contaminada. Enxaguar a pele com água [ou tomar um duche]. Lavar abundantemente com água e sabonete. Caso sinta indisposição, contacte um CENTRO DE INFORMAÇÃO ANTIVENENOS ou um médico.	
	P305+P351+P338-P310	SE ENTRAR EM CONTACTO COM OS OLHOS: Enxaguar cuidadosamente com água durante vários minutos. Se usar lentes de contacto, retire-as, se tal lhe for possível. Continue a enxaguar. Contacte imediatamente um CENTRO DE INFORMAÇÃO ANTIVENENOS ou um médico.	
	P501	Eliminar o conteúdo/recipiente em um ponto de recolha para resíduos perigosos ou especiais.	
	- Informações suplementares:		
	- Substâncias que contribuem para a classificação:		
	Acido L(+)-láctico	EC No. 201-196-2	
2.3	OUTROS PERIGOS: Perigos que não têm repercussões na classificação, mas que podem contribuir para o perigo global da substância: - Outros perigos físico-químicos: Não se conhecem outros efeitos adversos relevantes. - Outros riscos e efeitos adversos para a saúde humana: Não se conhecem outros efeitos adversos relevantes. - Outros riscos e efeitos adversos para o ambiente: Não cumpre os critérios PBT/mPmB. Propriedades desreguladoras do sistema endócrino: Este produto não contém substâncias com propriedades desreguladoras endócrinas identificadas ou em avaliação.		
SECÇÃO 3: COMPOSIÇÃO/INFORMAÇÃO SOBRE OS COMPONENTES			
3.1	SUBSTÂNCIAS: Este produto á uma substância em solução aquosa. Descrição química: Acido L(+)-2-hidroxipropânico CH3-CH(OH)-COOH COMPONENTES:		
	70 < C ≤ 80 %	Acido L(+)-láctico  CAS: 79-33-4, EC: 201-196-2, REACH: 01-2119474164-39 CLP: Perigo: Skin Corr. 1C:H314 Eye Dam. 1:H318 EUH071	REACH / ATP15
	Impurezas: Não contém outros componentes ou impurezas que possam influenciar a classificação do produto. Estabilizadores: Nenhum. Remissão para outras secções: Para maior informação sobre componentes perigosos, ver as secções 8, 11, 12 e 16. SUBSTÂNCIAS DE PREOCUPAÇÃO MUITO ELEVADA (SVHC): Lista atualizada pela ECHA em 10/06/2022. Substâncias SVHC sujeitas a autorização, incluídas no anexo XIV do Regulamento (CE) nº 1907/2006: Nenhuma. Substâncias SVHC candidatas a serem incluídas no anexo XIV do Regulamento (CE) nº 1907/2006: Nenhuma. Substâncias persistentes, bioacumuláveis, tóxicas (PBT) ou muito persistentes e muito bioacumuláveis (mPmB): Não cumpre os critérios PBT/mPmB.		
3.2	MISTURAS: Não aplicável (substância).		



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SECÇÃO 4: MEDIDAS DE PRIMEIROS SOCORROS

4.1

DESCRIÇÃO DAS MEDIDAS DE EMERGÊNCIA:



Os sintomas podem ocorrer após a exposição, de modo que em caso de exposição direta ao produto, em caso de dúvida, ou quando persistirem os sintomas do mal-estar, procurar cuidado médico. Nunca administrar nada pela boca a pessoas em estado de inconsciência. Os socorristas devem prestar atenção para a auto-protecção e usar a equipamento de protecção individual recomendada se houver uma possibilidade de exposição. Usar luvas protectoras quando se administrem primeiros socorros.

Via de exposição	Sintomas e efeitos, agudos e retardados	Descrição das medidas de primeiros socorros
Inalação:	A inalação produz sensação de queimadura, tosse, dificuldade respiratória e dor de garganta. Os sintomas do edema pulmonar não se manifestam, muita vezes, até algumas horas depois, e se agravam pelo esforço físico. Repouso e vigilância médica são por isso imprescindíveis.	Transportar o acidentado para o ar livre fora da zona contaminada. Se a respiração estiver irregular ou parada, aplicar a respiração artificial. Se a pessoa está inconsciente, colocar em posição de segurança apropriada. Manter coberto com roupa de abrigo enquanto se procura assistência médica.
Pele:	O contacto com a pele produz vermelhidão, queimaduras e dor.	Remover imediatamente a roupa contaminada. Lavar a fundo as zonas afectadas com abundante água fria ou morna e uma solução de bicarbonato sódico a 5%. Finalmente, repetir a lavagem da zona com água e sabão.
Olhos:	O contacto com os olhos causa vermelhidão, dor e queimaduras profundas graves e perda de visão.	Remover as lentes de contacto. Lavar por irrigação os olhos com água limpa abundante e fresca pelo menos durante 15 minutos, mantendo as pálpebras afastadas, até que a irritação diminua. Se a irritação persiste, consultar com um médico.
Ingestão:	Se ingerido, pode provocar fortes dores abdominais, dor de garganta, sensação de queimadura, náuseas, vômito, diarreia e colapso.	Chamar o médico. Pelo seu carácter ácido, os efeitos podem reduzir-se ao máximo dando a beber água abundante, agregando leite de magnésia. Não provocar o vômito, excepto quando expressamente indicado pelo médico.

4.2

SINTOMAS E EFEITOS MAIS IMPORTANTES, TANTO AGUDOS COMO RETARDADOS:

Os principais sintomas e efeitos são indicados nas secções 4.1 e 11.1

4.3

INDICAÇÕES SOBRE CUIDADOS MEDICOS URGENTES E TRATAMENTOS ESPECIAIS NECESSARIOS:

Informação para o médico:

As informações sobre a composição do produto foram enviadas para o Centro de Informação Antivenenos (CIAV). Em caso de acidente, ligue o CIAV, Telefone: (+351) 800250250 (24h/365d).

Em caso de exposição a este produto é necessário um tratamento específico; devem estar disponíveis os meios adequados com as instruções.

Antídotos e contraindicações:

Não disponível.

SECÇÃO 5: MEDIDAS DE COMBATE A INCÊNDIOS

5.1

MEIOS DE EXTINÇÃO:

Extintor de pó ou CO2.

5.2

PERIGOS ESPECIAIS DECORRENTES DA SUBSTÂNCIA OU MISTURA:

Como consequência da combustão e da decomposição térmica, podem formar-se produtos perigosos: monóxido de carbono, dióxido de carbono. A exposição aos produtos de combustão ou decomposição pode ser prejudicial para a saúde. O monóxido de carbono é muito tóxico por inalação. O dióxido de carbono, em concentrações suficientes, pode comportar-se como um gás asfixiante.

5.3

RECOMENDAÇÕES PARA O PESSOAL DE COMBATE A INCÊNDIOS:

Equipamento de protecção especial:

Dependendo da magnitude do incêndio, pode ser necessário usar vestuário de protecção contra o calor, equipamento de respiração autónomo, luvas, óculos protectores ou viseiras de segurança e botas. Se o equipamento de protecção contra incêndios não está disponível ou não utilizado, combater o incêndio de um lugar protegido ou distância segura. A norma EN469 fornece um nível básico de protecção em caso de incidente químico.

Outras recomendações:

Arrefecer com água os tanques, cisternas ou recipientes próximos da fonte de calor ou fogo. Observar a direcção do vento. Evitar que os produtos utilizados no combate contra-incêndios, passem para esgotos ou cursos de água.



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SECÇÃO 6: MEDIDAS EM CASO DE FUGA ACIDENTAL

6.1	<u>PRECAUÇÕES INDIVIDUAIS, EQUIPAMENTO DE PROTECÇÃO E PROCEDIMENTOS DE EMERGÊNCIA:</u> Eliminar as possíveis fontes de ignição e se necessário, ventilar a área. Não fumar. Evitar o contacto directo com o produto.
6.2	<u>PRECAUÇÕES A NÍVEL AMBIENTAL:</u> Evitar a contaminação de esgotos, águas superficiais ou subterrâneas e do solo. Em caso de se produzirem grandes derrames ou se o produto contaminar lagos, rios ou esgotos, informar as autoridades competentes, de acordo com a legislação local.
6.3	<u>MÉTODOS E MATERIAIS DE CONFINAMENTO E LIMPEZA:</u> Nunca deitar água neste produto. Recolher o derrame com materiais absorventes não-combustíveis (terra, areia, vermiculite, terra de diatomáceas, etc.). Transferir para um recipiente apropriado para sua recuperação ou eliminação. Neutralizar com carbonato ou bicarbonato de sódio. Finalmente, lavar a área com água em abundância. Guardar os resíduos num recipiente fechado.
6.4	<u>REMISSÃO PARA OUTRAS SECÇÕES:</u> Para informações de contacto em caso de emergência, ver a secção 1. Para informações sobre um manuseamento seguro, ver a secção 7. No controlo da exposição e medidas de protecção individual ver secção 8. Para a eliminação dos resíduos, seguir as recomendações da secção 13.

SECÇÃO 7: MANUSEAMENTO E ARMAZENAGEM

7.1	<u>PRECAUÇÕES PARA UM MANUSEAMENTO SEGURO:</u> Cumprir com a legislação em vigor sobre prevenção de riscos laborais. <u>- Recomendações gerais:</u> Manipular evitando projecções. Evitar todo tipo de derrame ou fuga. Não deixar os recipientes abertos. <u>- Recomendações para prevenir riscos de incêndio e explosão:</u> Devido à inflamabilidade, este material só pode ser utilizado em zonas livres de fontes de ignição e afastado das fontes de calor ou eléctricas. Não fumar. Ponto de inflamação 110 °C CLP 2.6.4.3. Temperatura de auto-ignição: Não aplicável. <u>- Recomendações para prevenir riscos toxicológicos:</u> Não comer, beber ou fumar durante o manuseamento. Depois do manuseamento, lavar as mãos com água e sabão. No controlo da exposição e medidas de protecção individual ver secção 8. <u>- Recomendações para prevenir a contaminação do meio ambiente:</u> Não se considera um perigo para o ambiente. No caso de derrames acidentais, seguir as instruções da secção 6.
7.2	<u>CONDIÇÕES DE ARMAZENAGEM SEGURA, INCLUINDO EVENTUAIS INCOMPATIBILIDADES:</u> Proibir o acesso a pessoas não autorizadas. Manter fora do alcance das crianças. O produto deve armazenar-se afastado de fontes de calor e eléctricas. Não fumar na área de armazenagem. Se possível, evitar a incidência directa de radiação solar. Para evitar derrames, os recipientes que forem abertos, devem ser cuidadosamente fechados e mantidos na posição vertical. Devido a sua natureza corrosiva, deve prestar-se extrema cautela na selecção de materiais para bombas, embalagens e linhas. O chão deve ser impermeável e resistente à corrosão, com um sistema de canais que permitam a recolha do líquido até uma fossa de neutralização. O equipamento eléctrico deve estar feito com materiais não oxidantes. Para maior informação, ver secção 10. <u>- Classe do armazém:</u> Conforme as disposições vigentes. <u>- Tempo máximo de armazenagem:</u> 6 Meses. <u>- Intervalo de temperaturas:</u> min:5 °C, max:40 °C (recomendado). <u>- Matérias incompatíveis:</u> Manter ao abrigo de agentes redutores, agentes oxidantes, álcalis. <u>- Tipo de embalagem:</u> Conforme as disposições vigentes. <u>- Quantidades limite (Seveso III): Directiva 2012/18/UE (DL.150/2015):</u> - Substâncias/misturas perigosas designadas: Nenhuma - Categorias de perigo e quantidades limite inferior/superior em toneladas (t): · Perigos físicos: Não aplicável. · Perigos para a saúde: Não aplicável · Perigos para o ambiente: Não aplicável · Outros perigos: Corrosivo para as vias respiratórias. (O4) (50t/200t). - Quantidade-limiar para a aplicação de requisitos do nível inferior: 50 toneladas - Quantidade-limiar para a aplicação de requisitos do nível superior: 200 toneladas Corrosivo para as vias respiratórias. (O4) (50t/200t). - Observações: As quantidades-limiar atrás indicadas dizem respeito a cada estabelecimento. As quantidades a ter em conta para a aplicação dos artigos pertinentes são as quantidades máximas presentes ou passíveis de estarem presentes num determinado momento. Para o cálculo da quantidade total presente não são tidas em conta as substâncias perigosas presentes num estabelecimento em quantidades não superiores a 2% da quantidade-limiar pertinente, caso a sua localização no interior do estabelecimento não lhes permita desencadear um acidente grave noutro local desse estabelecimento. Para mais pormenores, ver nota 4 do Anexo I da Directiva Seveso.
7.3	<u>UTILIZAÇÃO(ÕES) FINAL(IS) ESPECÍFICA(S):</u> Nenhuma recomendação específica disponível pelo uso deste produto distintas das já indicadas.

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SECÇÃO 8: CONTROLO DA EXPOSIÇÃO/PROTEÇÃO INDIVIDUAL

8.1

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Óculos: 	✓ Óculos de segurança com proteções laterais para produtos químicos (EN166).Limpar diariamente e desinfetar periodicamente de acordo as instruções do fabricante.
Viseira de segurança:	Viseira de segurança contra respingos de líquidos (EN166), recomendável quando possa haver risco de derrame, projecção ou nebulização do liquido.
Luvras: 	✓ Luvas de borracha de nitrilo, espessas >0.5 mm (EN374). Nivel 6: Tempo de penetração >480 min (protecção de contacto permanente). Quando só espera-se um breve contato, recomenda-se usar luvas com protecção do nível 3 ou superior, com um tempo de penetração >60 min. O tempo de penetração das luvas seleccionadas deve ser de acordo com o período de uso pretendido. Existem vários factores (por exemplo, a temperatura), que fazem com que na prática o período de uso de umas luvas de protecção resistentes aos produtos químicos seja manifestamente inferior ao estabelecido na norma EN374. Para seleccionar um tipo específico de luvas para certas aplicações, com uma determinada duração, devem-se considerar fatores relevantes no lugar de trabalho (sem se-limitar a eles), como: Devido à grande variedade de circunstâncias e possibilidades, temos de ter em conta o manual de instruções dos fabricantes de luvas. Se usado em solução ou misturado com outras substâncias, ou em condições diferentes da EN374, contactar com o fornecedor das luvas aprovadas. Utilizar a técnica adequada de retirar as luvas (sem tocar a superfície exterior da luva) para evitar o contacto deste produto com a pele. As luvas devem ser substituídas imediatamente, caso se observem indícios de degradação.
Botas: 	✓ Botas de borracha de neopreno (EN347).
Avental:	Não.
Fato macaco: 	✓ Roupa adequada de trabalho que evite o contacto com o produto. Não utilizar roupa e calçado contaminados.

- Perigos térmicos:
Não aplicável (o produto é manuseado à temperatura ambiente).



CONTROLO DA EXPOSIÇÃO AMBIENTAL:
Evitar qualquer derrame para o meio ambiente.

- Derrames no solo:
Evitar a penetração no terreno.

- Derrames na água:
Não se deve permitir que o produto entre nos esgotos nem em linhas de água.

-Lei de gestão de águas:
Este produto não contém qualquer substância na lista de substâncias prioritárias no domínio da política da águas, de acordo com a Directiva 2000/60/CE~2013/39/UE.



- Emissões na atmosfera:
Não aplicável.

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SECÇÃO 9: PROPRIEDADES FÍSICO-QUÍMICAS

9.1	<p>INFORMAÇÕES SOBRE PROPRIEDADES FÍSICAS E QUÍMICAS DE BASE:</p> <p><u>Aspecto</u></p> <table><tr><td>Estado físico:</td><td>Líquido</td><td></td></tr><tr><td>Cor:</td><td>Incolor Amarelado</td><td></td></tr><tr><td>Odor:</td><td>Inodoro</td><td></td></tr><tr><td>Limiar olfativo:</td><td>Não disponível</td><td></td></tr></table> <p><u>Mudança de estado</u></p> <table><tr><td>Ponto de fusão:</td><td>0,00 °C</td><td></td></tr><tr><td>Ponto de ebulição inicial:</td><td>> 100 °C a 760 mmHg</td><td></td></tr></table> <p><u>- Inflamabilidade:</u></p> <table><tr><td>Ponto de inflamação</td><td>110 °C</td><td>CLP 2.6.4.3.</td></tr><tr><td>Limites inferior/superior de inflamabilidade/explosividade:</td><td>Não disponível</td><td></td></tr><tr><td>Temperatura de auto-ignição:</td><td>Não aplicável.</td><td></td></tr></table> <p><u>Estabilidade</u></p> <table><tr><td>Temperatura de decomposição:</td><td>> 200,00 °C</td><td></td></tr></table> <p><u>Valor pH</u></p> <table><tr><td>pH:</td><td>2 a 20°C</td><td></td></tr></table> <p><u>- Viscosidade:</u></p> <table><tr><td>Viscosidade dinâmica:</td><td>0,95 cps a 20°C</td><td></td></tr><tr><td>Viscosidade cinemática:</td><td>0,33 mm2/s a 40°C</td><td></td></tr></table> <p><u>- Solubilidade(s):</u></p> <table><tr><td>Solubilidade em água</td><td>86 g/l a 20°C</td><td></td></tr><tr><td>Lipossolubilidade:</td><td>Não aplicável (substância inorgânica).</td><td></td></tr><tr><td>Coeficiente de partição n-octanol/água:</td><td>-0,54 (como log Pow)</td><td></td></tr></table> <p><u>- Volatilidade:</u></p> <table><tr><td>Pressão de vapor:</td><td>17,535 mmHg a 20°C</td><td></td></tr><tr><td>Pressão de vapor:</td><td>12,113 kPa a 50°C</td><td></td></tr><tr><td>Taxa de evaporação:</td><td>Não disponível (falta de dados).</td><td></td></tr></table> <p><u>Densidade</u></p> <table><tr><td>Densidade relativa:</td><td>1,153 a 20/4°C</td><td>Relativa água</td></tr><tr><td>Densidade relativa do vapor:</td><td>< 1 (mais leve que o ar).</td><td></td></tr></table> <p><u>Características de partícula</u></p> <table><tr><td>Tamanho da partícula:</td><td>Não aplicável.</td><td></td></tr></table> <p><u>- Propriedades explosivas:</u></p> <p>Na molécula não há grupos químicos associados a propriedades explosivas.</p> <p><u>- Propriedades comburentes:</u></p> <p>Não classificado como produto comburente.</p>	Estado físico:	Líquido		Cor:	Incolor Amarelado		Odor:	Inodoro		Limiar olfativo:	Não disponível		Ponto de fusão:	0,00 °C		Ponto de ebulição inicial:	> 100 °C a 760 mmHg		Ponto de inflamação	110 °C	CLP 2.6.4.3.	Limites inferior/superior de inflamabilidade/explosividade:	Não disponível		Temperatura de auto-ignição:	Não aplicável.		Temperatura de decomposição:	> 200,00 °C		pH:	2 a 20°C		Viscosidade dinâmica:	0,95 cps a 20°C		Viscosidade cinemática:	0,33 mm2/s a 40°C		Solubilidade em água	86 g/l a 20°C		Lipossolubilidade:	Não aplicável (substância inorgânica).		Coeficiente de partição n-octanol/água:	-0,54 (como log Pow)		Pressão de vapor:	17,535 mmHg a 20°C		Pressão de vapor:	12,113 kPa a 50°C		Taxa de evaporação:	Não disponível (falta de dados).		Densidade relativa:	1,153 a 20/4°C	Relativa água	Densidade relativa do vapor:	< 1 (mais leve que o ar).		Tamanho da partícula:	Não aplicável.	
Estado físico:	Líquido																																																																		
Cor:	Incolor Amarelado																																																																		
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Tamanho da partícula:	Não aplicável.																																																																		
9.2	<p>OUTRAS INFORMAÇÕES:</p> <p><u>Informações sobre as classes de perigo físico</u></p> <p>Nenhuma informação adicional disponível.</p> <p><u>Outros recursos de segurança:</u></p> <table><tr><td>Peso molecular (numérico):</td><td>18,02 g/mol</td><td></td></tr><tr><td>Tensão superficial:</td><td>72,8 din/cm a 20°C</td><td></td></tr><tr><td>Calor de combustão:</td><td>2894 Kcal/kg</td><td></td></tr></table> <p>Os valores indicados nem sempre coincidem com as especificações do produto. Os dados correspondentes às especificações do produto podem ser encontradas na folha técnica do mesmo. Para maior informação sobre propriedades físicas e químicas relativas a segurança e meio ambiente, ver as secções 7 e 12.</p>	Peso molecular (numérico):	18,02 g/mol		Tensão superficial:	72,8 din/cm a 20°C		Calor de combustão:	2894 Kcal/kg																																																										
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SECÇÃO 10: ESTABILIDADE E REATIVIDADE

10.1	REATIVIDADE: <u>- Corrosividade para os metais:</u> Não disponível. <u>- Propriedades pirofóricas:</u> Não pirofórico.
10.2	ESTABILIDADE QUÍMICA: Estável dentro das condições recomendadas de armazenagem e manuseamento.
10.3	POSSIBILIDADE DE REAÇÕES PERIGOSAS: Possível reacção perigosa com agentes redutores, agentes oxidantes, álcalis. Ataca o ferro em presença de humidade.
10.4	CONDIÇÕES A EVITAR: <u>- Calor:</u> Manter afastado de fontes de calor. <u>- Luz:</u> Se possível, evitar a incidência directa de radiação solar. <u>- Ar:</u> O produto não é afectada por exposição ao ar, mas os recipientes não devem ser deixados abertos. <u>- Pressão:</u> Não relevante. <u>- Choques:</u> O produto não é sensível a choques, mas como uma recomendação de carácter geral devem ser evitados choques e manuseio brusco para evitar mossas e quebra de embalagens, especialmente quando o produto é manuseado em grandes quantidades, e durante as operações de carga e descarga.
10.5	MATERIAIS INCOMPATIVES: Manter ao abrigo de agentes redutores, agentes oxidantes, álcalis.
10.6	PRODUTOS DE DECOMPOSIÇÃO PERIGOSOS: Como consequência da decomposição térmica, podem formar-se produtos perigosos: .

SECÇÃO 11: INFORMAÇÃO TOXICOLÓGICA

11.1

INFORMAÇÕES SOBRE AS CLASSES DE PERIGO. TAL COMO DEFINIDAS NO REGULAMENTO (CE) N.º 1272/2008:

TOXICIDADE AGUDA:

Doses e concentrações letais de componentes individuais:	DL50 (OECD401) mg/kg bw Oral	DL50 (OECD402) mg/kg bw Cutânea	CL50 (OECD403) mg/m3·4h Inalação
Acido L(+)-láctico	3543 Cobaia	> 2000 Coelho	> 7400 Cobaia
Estimativas da toxicidade aguda (ATE) de componentes individuais:	ATE mg/kg bw Oral	ATE mg/kg bw Cutânea	ATE mg/m3·4h Inalação
Acido L(+)-láctico	-	-	7400

(*) - Estimativa pontual de toxicidade aguda correspondente à categoria de classificação (ver GHS/CLP Tabela 3.1.2). Estes valores foram concebidos para serem utilizados no cálculo da ATE para efeitos de classificação de misturas com base nos seus componentes e não representam resultados de ensaios.


(-) - Os componentes que se presume não ter toxicidade aguda no limite superior da categoria 4 para a via de exposição correspondente são ignorados.

- Dose sem efeitos adversos observados
Não disponível

- Dose mínima sem efeitos adversos observados
Não disponível


INFORMAÇÕES SOBRE VIAS DE EXPOSIÇÃO PROVÁVEIS: TOXICIDADE AGUDA:

Vias de exposição	Toxicidade aguda	Cat.	Principais efeitos, agudos e/ou retardados	Critério
Inalação: Não classificado	ATE > 5000 mg/m3	Não disponível.	Não classificado como um produto com toxicidade aguda por inalação (com base nos dados disponíveis, os critérios de classificação não são preenchidos).	GHS/CLP 3.1.2. OECD 403
Pele: Não classificado	ATE > 2000 mg/kg bw	Não disponível.	Não classificado como um produto com toxicidade aguda em contacto com a pele (com base nos dados disponíveis, os critérios de classificação não são preenchidos).	GHS/CLP 3.1.2. OECD 402
Olhos: Não classificado	Não disponível.	-	Não classificado como um produto com toxicidade aguda por contacto com os olhos (falta de dados).	GHS/CLP 1.2.5.
Ingestão: Não classificado	ATE > 2000 mg/kg bw	Não disponível.	Não classificado como um produto com toxicidade aguda por ingestão (com base nos dados disponíveis, os critérios de classificação não são preenchidos).	GHS/CLP 3.1.2. OECD 401



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CORROSÃO / IRRITAÇÃO / SENSIBILIZAÇÃO:

Classe de perigo	Orgãos-alvo	Cat.	Principais efeitos, agudos e/ou retardados	Critério
- Corrosão/irritação respiratória: 		-	CORROSIVO: Corrosivo para as vias respiratórias.	GHS/CLP 1.2.6. 3.8.2.2.1.
- Corrosão/irritação cutânea: 	Pele 	Cat. 1C	CORROSIVO: Provoca queimaduras na pele.	GHS/CLP 3.2.2. OECD 404
- Lesão/irritação ocular grave: Não classificado	-	-	Não classificado como um produto corrosivo ou irritante em contacto com os olhos (com base nos dados disponíveis, os critérios de classificação não são preenchidos).	GHS/CLP 3.3.2. OECD 405
- Sensibilização respiratória: Não classificado	-	-	Não classificado como um produto sensibilizante por inalação (com base nos dados disponíveis, os critérios de classificação não são preenchidos).	GHS/CLP 3.4.2.1.
- Sensibilização cutânea: Não classificado	-	-	Não classificado como um produto sensibilizante em contacto com a pele (com base nos dados disponíveis, os critérios de classificação não são preenchidos).	GHS/CLP 3.4.2.2. OECD 406

- PERIGO DE ASPIRAÇÃO:

Classe de perigo	Orgãos-alvo	Cat.	Principais efeitos, agudos e/ou retardados	Critério
- Perigo de aspiração: Não classificado	-	-	Não classificado como um produto perigoso por aspiração (com base nos dados disponíveis, os critérios de classificação não são preenchidos).	GHS/CLP 3.10.2.

TOXICIDADE PARA ORGÃOS-ALVO ESPECÍFICOS (STOT): Exposição única (SE) e/ou Exposição repetida (RE):

Não classificado como um produto com toxicidade para órgãos-alvo específicos (com base nos dados disponíveis, os critérios de classificação não são preenchidos).

EFEITOS CMR:

- Efeitos cancerígenos:

Não é considerado como um produto cancerígeno.

- Genotoxicidade:

Não é considerado como um produto mutagénico.

- Toxicidade para a reprodução:

Não prejudica a fertilidade.Não prejudica o desenvolvimento do feto.

- Efeitos via aleitamento:

Não classificado como um produto prejudicial para as crianças em aleitamento materno.

EFEITOS IMEDIATOS E RETARDADOS E EFEITOS CRÓNICOS DECORRENTES DE EXPOSIÇÃO BREVE E PROLONGADA:

Vias de exposição

Não disponível.

- Exposição a curto prazo:

Pode produzir queimaduras na pele ou nos olhos por contacto directo ou nas vias digestivas em caso de ingestão. A inalação dos aerossóis ou partículas em suspensão pode causar irritação das vias respiratórias. A inalação pode originar edema pulmonar. O contacto com os olhos pode provocar uma irritação intensa das mucosas oculares. As lesões da córnea podem ser graves e extensas. Irritante para a pele.

- Exposição prolongada ou repetida:

Se se utiliza de acordo com as instruções, não produz efeitos permanentes conhecidos em seres humanos por exposição descontínua durante largos períodos de tempo.



INTERACCÕES:

Não disponível.

INFORMAÇÕES SOBRE TOXICOCINÉTICA, METABOLISMO E DISTRIBUIÇÃO:

- Absorção dérmica:

Não disponível.

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	<p>- Toxicocinética básica: Não disponível.</p> <p>INFORMAÇÃO ADICIONAL: Pode produzir queimaduras na pele ou nos olhos por contacto directo ou nas vias digestivas em caso de ingestão. As névoas de finas partículas são irritantes para a pele e as vias respiratórias.</p>
11.2	<p>INFORMAÇÕES SOBRE OUTROS PERIGOS: Propriedades desreguladoras do sistema endócrino: Este produto não contém substâncias com propriedades desreguladoras endócrinas identificadas ou em avaliação. Outras informações: Nenhuma informação adicional disponível.</p>

SECÇÃO 12: INFORMAÇÃO ECOLÓGICA

12.1

TOXICIDADE:

- Toxicidade aguda em meio aquático de componentes individuais	CL50 (OECD 203) mg/l · 96horas	CE50 (OECD 202) mg/l · 48horas	CE50 (OECD 201) mg/l · 72horas
Acido L(+)-láctico	320 - Peixes	250 - Dafnias	3500 - Algas

- Concentração sem efeitos observados

	NOEC (OECD 210) mg/l · 28 dias	NOEC (OECD 211) mg/l · 21 dias	NOEC (OECD 201) mg/l · 72 horas
Acido L(+)-láctico			1900 - Algas

- Concentração mínima com efeitos observados

Não disponível

AVALIAÇÃO DA TOXICIDADE AQUÁTICA:

Toxicidade aquática	Cat.	Principais perigos para o ambiente aquático	Critério
- Toxicidade aquática aguda: Não classificado	-	Não classificado como um material perigoso, com uma toxicidade aguda para os organismos aquáticos (com base nos dados disponíveis, os critérios de classificação não são preenchidos).	GHS/CLP 4.1.2.
- Toxicidade aquática crônica:	-	Não classificado como um produto perigoso com toxicidade crônica para os organismos aquáticos com efeitos duradouros (com base nos dados disponíveis, os critérios de classificação não são preenchidos).	GHS/CLP 4.1.2.

12.2

PERSISTÊNCIA E DEGRADABILIDADE:

- Biodegradabilidade:

Facilmente biodegradável.

Biodegradação aeróbica de componentes individuais	CQO mgO2/g	%DBO/DQO 5 dias 14 dias 28 dias	Biodegradabilidad
Acido L(+)-láctico	902	50 67 -	Fácil

Nota: Os dados de biodegradabilidade correspondem a uma média de dados de várias fontes bibliográficas.

- Hidrólise:

Não aplicável.

- Fotodegradabilidade:

Não disponível.

12.3

POTENCIAL DE BIOACUMULAÇÃO:

Não bioacumulável.

Bioacumulação de componentes individuais	logPow	BCF L/kg	Potencial
Acido L(+)-láctico	-0.54	3.2 (calculado)	Não bioacumulável

12.4

MOBILIDADE NO SOLO:

Não disponível

Movilidade de componentes individuais	log Poc	Constante de Henry Pa · m3/mol 20°C	Potencial
Acido L(+)-láctico	-0,65		Não bioacumulável

12.5

RESULTADOS DA AVALIAÇÃO PBT E MPMB:(Anexo XIII do Regulamento (CE) nº 1907/2006:)

Não cumpre os critérios PBT/mPmB : Meia-vida no meio ambiente marinho < 60 dias,Meia-vida em água doce ou de estuários < 40 dias,Meia-vida em sedimentos marinhos < 180 dias,Meia-vida em sedimentos de água doce ou de estuários < 120 dias,Meia-vida no solo < 120 dias,Factor de bioconcentração BCF < 2000,"Concentração sem efeito observado" a longo prazo dos organismos de água doce ou águas marinhas NOEC > 0.01 mg/l,NÃO é classificado como CMR,NÃO tem potencial de desregulação endócrina.

12.6

PROPRIEDADES DESREGULADORAS DO SISTEMA ENDÓCRINO:

Este produto não contém substâncias com propriedades desreguladoras endócrinas identificadas ou em avaliação.

12.7

OUTROS EFEITOS ADVERSOS:

- Potencial de empobrecimento da camada do ozono:

Não perigoso para a camada de ozono.

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- Potencial de criação fotoquímica de ozono:

Não aplicável.

- Potencial de contribuição para o aquecimento global:

Em caso de incêndio ou incineração liberta-se CO2.

SECÇÃO 13: CONSIDERAÇÕES RELATIVAS À ELIMINAÇÃO

13.1 MÉTODOS DE TRATAMENTO DE RESÍDUOS: Directiva 2008/98/CE~Regulamento (UE) nº 1357/2014 (DL.178/2006~DL.73/2011):

Tomar todas as medidas que sejam necessárias para evitar ao máximo a produção de resíduos. Analisar possíveis métodos de revalorização ou reciclagem. Não efectuar a descarga no sistema de esgotos ou no ambiente; entregar num local autorizado para recolha de resíduos. Os resíduos devem manipular-se e eliminar-se de acordo com as legislações locais e nacionais vigentes. No controlo da exposição e medidas de protecção individual ver secção 8.

Eliminação recipientes vazios: Directiva 94/62/CE~2015/720/UE (DL.152-D/2017 e DL.102-D/2020), Decisão 2000/532/CE~2014/955/UE (DL.92/2006, DL.178/2006 e DL.73/2011) e Decisão 2014/955/UE (DL.71/2016):

Os recipientes vazios e embalagens devem eliminar-se de acordo com as legislações locais e nacionais vigentes. A classificação da embalagem como resíduo perigoso dependerá do grau de esvaziamento da mesma, sendo o detentor do resíduo o responsável pela sua classificação, em conformidade com o Capítulo 15 01 da Portaria 209/2004, e pelo encaminhamento para destino final adequado. Com os recipientes e embalagens contaminados deverão adoptar as mesmas medidas que para o produto.

Procedimentos da neutralização ou destruição do produto:

Incineração controlada em instalações especiais de resíduos químicos, de acordo com os regulamentos locais.

SECÇÃO 14: INFORMAÇÕES RELATIVAS AO TRANSPORTE

14.1 NÚMERO ONU OU NÚMERO DE ID:

3265

14.2 DESIGNAÇÃO OFICIAL DE TRANSPORTE DA ONU:

LÍQUIDO ORGÂNICO CORROSIVO, ÁCIDO, N.S.A. (Acido L(+)-láctico)

14.3 CLASSE(S) DE PERIGO PARA EFEITOS DE TRANSPORTE:

Transporte rodoviário (ADR 2021) e

Transporte ferroviário (RID 2021):

- Classe: 8
- Grupo de embalagem: III
- Código de classificação: C3
- Código de restrição em túneis: (E)
- Categoria de transporte: 3, máx. ADR 1.1.3.6. 1000 L
- Quantidades limitadas: 5 L (ver isenções totais ADR 3.4)
- Documento do transporte: Documento do transporte.
- Instruções escritas: ADR 5.4.3.4



Transporte via marítima (IMDG 39-18):

- Classe: 8
- Grupo de embalagem: III
- Ficha de Emergência (EmS): F-A,S-B
- Guia Primeiros Socorros (MFAG): 760
- Poluente marinho: Não.
- Documento do transporte: Conhecimento do embarque.



Transporte via aérea (ICAO/IATA 2021):

- Classe: 8
- Grupo de embalagem: III
- Documento do transporte: Conhecimento aéreo.



Transporte por via navegável interior (ADN):

Não disponível

14.4 GRUPO DE EMBALAGEM:

Ver secção 14.3

14.5 PERIGOS PARA O AMBIENTE:



Não aplicável (não classificado como perigoso para o ambiente).

14.6 PRECAUÇÕES ESPECIAIS PARA O UTILIZADOR:

Assegurar-se que as pessoas transportando o produto sabem o que fazer em caso de acidente ou derrame. Transporte sempre em recipientes fechados, mantidos em posição vertical e segura.

14.7 TRANSPORTE MARÍTIMO A GRANEL EM CONFORMIDADE COM OS INSTRUMENTOS DA OMI:

Não disponível.

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SECÇÃO 15: INFORMAÇÃO SOBRE REGULAMENTAÇÃO							
15.1	<u>REGULAMENTAÇÃO/LEGISLAÇÃO ESPECÍFICA PARA A SUBSTÂNCIA OU MISTURA EM MATÉRIA DE SAÚDE, SEGURANÇA E AMBIENTE:</u> Os regulamentos aplicáveis a este produto estão listados geralmente ao longo desta ficha de dados de segurança. <u>Restrições ao fabrico, à colocação no mercado e à utilização:</u> Ver secção 1.2 <u>Advertência de perigo táctil:</u> Não aplicável (produto para utilização profissional ou industrial). <u>Protecção de segurança para crianças:</u> Não aplicável (produto para utilização profissional ou industrial). <u>OUTRAS LEGISLAÇÕES:</u> <u>Controle dos riscos inerentes aos acidentes graves (Seveso III):</u> Ver secção 7.2 <u>Outras legislações locais:</u> O receptor deve verificar a possível existência de regulamentos locais aplicáveis ao produto químico.						
15.2	<u>AVALIAÇÃO DA SEGURANÇA QUÍMICA:</u> Para este produto foi feita uma avaliação da segurança química.						
SECÇÃO 16: OUTRAS INFORMAÇÕES							
16.1	<u>TEXTO DAS FRASES E NOTAS REFERENCIADAS NAS SECÇÕES 2 E/OU 3:</u> <u>Indicações de perigo segundo o Regulamento (UE) nº 1272/2008~2021/849 (CLP), Anexo III:</u> H314 Provoca queimaduras na pele e lesões oculares graves. H318 Provoca lesões oculares graves. EUH071 Corrosivo para as vias respiratórias. <u>RECOMENDAÇÕES ACERCA DA EVENTUAL FORMAÇÃO A MINISTRAR AOS TRABALHADORES:</u> Recomenda-se que todos os funcionários que lidem com este produto realizar um treino básico em prevenção de riscos laborais, a fim de facilitar a compreensão e interpretação das fichas de segurança e rotulagem dos produtos. <u>REFERÊNCIAS BIBLIOGRÁFICAS IMPORTANTES E FONTES DOS DADOS UTILIZADOS:</u> <ul style="list-style-type: none">European Chemicals Agency: ECHA, http://echa.europa.eu/Access to European Union Law, http://eur-lex.europa.eu/Acordo europeu sobre transporte rodoviário internacional de mercadorias perigosas, (ADR 2021).Código marítimo internacional de mercadorias perigosas IMDG incluindo a alteração 39-18 (IMO, 2018). <u>ABREVIATURAS E SIGLAS:</u> Lista de abreviaturas e siglas que poderiam ser usadas (embora não necessariamente utilizadas) nesta ficha de dados de segurança: <ul style="list-style-type: none">REACH: Regulamento relativo ao registo, avaliação, autorização e restrição dos produtos químicos.GHS: Sistema Globalmente Harmonizado de Classificação e Rotulagem de produtos químicos das Nações Unidas.CLP: Regulamento Europeu sobre Classificação, Embalagem e Rotulagem de Substâncias e Misturas químicas.EINECS: Inventário europeu das substâncias químicas existentes no mercado.ELINCS: Inventário europeu das substâncias químicas notificadas.CAS: Chemical Abstracts Service (Division of the American Chemical Society).UVCB: Substância complexa com composição desconhecida ou variável, produtos de reacção complexa ou materiais biológicos.SVHC: Substâncias de preocupação muito elevada.PBT: Substâncias persistentes, bioacumuláveis e tóxicas.mPmB: Substâncias muito persistentes e muito bioacumuláveis.DNEL: Nível derivado sem efeito (REACH).PNEC: Concentração previsivelmente sem efeitos (REACH).LC50: Concentração letal, 50 por cento.LD50: Dose letal, 50 por cento.ONU: Organização das Nações Unidas.ADR: Acordo europeu sobre transporte rodoviário internacional de mercadorias perigosas.RID: Regulações concernentes ao transporte ferroviário internacional de mercadorias perigosas.IMDG: Código marítimo internacional de mercadorias perigosas.IATA: International Air Transport Association.ICAO: International Civil Aviation Organization. <u>REGULAÇÕES SOBRE FICHAS DE DADOS DE SEGURANÇA:</u> Ficha de Dados de Segurança em conformidade com o Artigo 31 do Regulamento (CE) nº 1907/2006 (REACH) e com o Anexo do Regulamento (UE) nº 2020/878. <u>HISTÓRICO:</u> <table><tr><td>Versão: 2</td><td>14/11/2022</td></tr><tr><td>Versão: 3</td><td>23/01/2023</td></tr></table> <u>Alterações em relação a ficha de dados de segurança anterior:</u> As possíveis alterações legislativas, contextuais, numéricas, metodológicas e normativas com respeito a versão precedente são destacadas nesta ficha de dados de segurança por uma marca #.			Versão: 2	14/11/2022	Versão: 3	23/01/2023
Versão: 2	14/11/2022						
Versão: 3	23/01/2023						
As informações contidas nesta Ficha de Dados de Segurança, tem como base o melhor do nosso conhecimento sobre o produto e as leis em vigor na Comunidade Europeia, dado que as condições de trabalho do utilizador estão para além do nosso conhecimento e controlo. O produto não deve ser usado com outro propósito senão o especificado. É sempre exclusivamente da responsabilidade do utilizador seguir todos os passos necessários de maneira a cumprir o estabelecido nas leis e regras vigentes. As informações constantes desta Ficha de Dados de Segurança são apenas a descrição dos cuidados a ter para utilizar com segurança o nosso produto: não poderão em caso algum ser consideradas como uma garantia das propriedades do produto.							
ANEXO: Cenários de Exposição (56 páginas)							

CENÁRIOS DE EXPOSIÇÃO

ACIDO LACTICO COMESTIVEL

Substance Name: L-(+)-lactic acid

EC Number: 201-196-2

CAS Number: 79-33-4

Date of Generation/Revision: 14/11/2022

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1. ES 1: Manufacture

1.1. Title section

ES name: Manufacture

Environment	
1: Manufacture of the substance	ERC 1
Worker	
2: Chemical production in closed process without likelihood of exposure	PROC 1
3: Chemical production in closed continuous process with occasional controlled exposure	PROC 2
4: Manufacture in closed batch processes with occasional controlled exposure	PROC 3
5: Chemical production where opportunity for exposure arises	PROC 4
6: Transfer of substance or mixture at non-dedicated facilities	PROC 8a
7: Transfer of substance or mixture at dedicated facilities	PROC 8b
8: Transfer of substance or mixture into small containers	PROC 9
9: Use as laboratory reagent	PROC 15
10: Manual maintenance (cleaning and repair) of machinery	PROC 28

1.2. Conditions of use affecting exposure

1.2.1. Control of worker exposure

The substance is classified for serious eye damage and skin corrosion (moderate hazard, respectively) and additionally labelled as EUH071. Implementation of the following RMMs will ensure that risks due to the irritating properties are controlled to a level of no concern:

Risk management measures	
General risk management measures and advice for operating a closed system:	<ul style="list-style-type: none">• Training of staff on good practice.• Good standard of personal hygiene.• Management/supervision in place to check that the RMMs in place are being used correctly and OCs followed
For handling the substance outside a closed system (e.g. sampling, cleaning, etc.) additional safety measures have to be adopted:	<ul style="list-style-type: none">• Minimization of staff exposed• Segregation of the emitting process• Effective contaminant extraction• Good standard of general ventilation• Minimization of manual phases• Avoidance of contact with contaminated tools and objects• Regular cleaning of equipment and work area
Additional risk management measures and advice:	<ul style="list-style-type: none">• Protective gloves:<ul style="list-style-type: none">○ Material: Butyl rubber, chloroprene rubber, polyvinylchloride (Permeation 6 (> 480 minutes); thickness 0.5 mm; standard EN374; pictograms: yes);○ Material: Nitrile rubber (permeation 6 (> 480 minutes); thickness 0.35 mm; Standard EN374; pictograms: yes)○ Material: FKM; (thickness 0.4 mm; Standard EN374; pictograms: yes)• Eye protection: Safety goggles; if there is a risk of splashes (e.g. sampling): face shield<ul style="list-style-type: none">○ Safety goggles (use: aerosols, droplets; standard: EN166; pictograms: yes)

	<ul style="list-style-type: none"> ○ Face shield (use: aerosols, droplets; standard: EN166; pictograms: yes) • Skin and body protection: Wear suitable protective clothing; if there is a risk of large splashes (e.g. transfer): use protective apron. <ul style="list-style-type: none"> ○ Safety boots (high shoes): standard: EN13832; pictogram: yes ○ Long-sleeved protective clothing: standard: 13034; pictogram: yes ○ Protective apron: Standard: EN14605: type 3; pictograms: yes • Respiratory protection: In case of spraying (not closed system), respiratory protection equipment is required. <ul style="list-style-type: none"> ○ Full-face mask (filter type: A, high boiling point organic compound (> 65 °C); condition: aerosols, droplets; standard: EN 140) • In case of spills/calamities: Face shield, safety boots, long-sleeved protective clothing, protective gloves.
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Conditions of use applicable to all contributing scenarios

Product (article) characteristics
Liquid
Covers concentrations up to 100 %
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 8 h/day
Technical and organisational conditions and measures
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personal operating under supervision.; Ensure regular inspection, cleaning and maintenance of equipment and machines.; Clear spills immediately.; Ensure daily cleaning of the equipment.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS.
Use suitable eye protection.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40 °C

1.3. Exposure estimation and reference to its source

A quantitative risk assessment is not required based on the hazard profile of the substance (only acute local effects applicable).

1.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Scaling is not considered appropriate for this substance as no quantitative risk assessment was performed and a generic set of risk management measures is proposed.

2. ES 2: Formulation or re-packing

2.1. Title section

ES name: *Formulation into mixture*

Environment	
1: <i>Formulation into matrix</i>	ERC 2
Worker	
2: <i>Chemical production in closed process without likelihood of exposure</i>	PROC 1
3: <i>Chemical production in closed continuous process with occasional controlled exposure</i>	PROC 2
4: <i>Formulation in closed batch processes with occasional controlled exposure</i>	PROC 3
5: <i>Chemical production where opportunity for exposure arises</i>	PROC 4
6: <i>Mixing or blending in batch processes</i>	PROC 5
7: <i>Calendering operations</i>	PROC 6
8: <i>Transfer of substance or mixture at non-dedicated facilities</i>	PROC 8a
9: <i>Transfer of substance or mixture at dedicated facilities</i>	PROC 8b
10: <i>Transfer of substance or mixture into small containers</i>	PROC 9
11: <i>Treatment of articles by dipping and pouring</i>	PROC 13
12: <i>Tabletting, compression, extrusion, pelletisation, granulation</i>	PROC 14
13: <i>Use as laboratory reagent</i>	PROC 15
14: <i>Manual activities involving hand contact</i>	PROC 19
15: <i>Handling of solid inorganic substances at ambient temperature</i>	PROC 26
16: <i>Manual maintenance (cleaning and repair) of machinery</i>	PROC 28

2.2. Conditions of use affecting exposure

2.2.1. Control of worker exposure

The substance is classified for serious eye damage and skin corrosion (moderate hazard, respectively) and additionally labelled as EUH071. Implementation of the following RMMs will ensure that risks due to the irritating properties are controlled to a level of no concern:

Risk management measures	
General risk management measures and advice for operating a closed system:	<ul style="list-style-type: none"> • Training of staff on good practice. • Good standard of personal hygiene. • Management/supervision in place to check that the RMMs in place are being used correctly and OCs followed
For handling the substance outside a closed system (e.g. sampling, cleaning, etc.) additional safety measures have to be adopted:	<ul style="list-style-type: none"> • Minimization of staff exposed • Segregation of the emitting process • Effective contaminant extraction • Good standard of general ventilation • Minimization of manual phases • Avoidance of contact with contaminated tools and objects • Regular cleaning of equipment and work area
Additional risk management measures and advice:	<ul style="list-style-type: none"> • Protective gloves: <ul style="list-style-type: none"> ○ Material: Butyl rubber, chloroprene rubber, polyvinylchloride (Permeation 6 (> 480 minutes); thickness 0.5 mm; standard EN374; pictograms: yes);

	<ul style="list-style-type: none"> ○ Material: Nitrile rubber (permeation 6 (> 480 minutes); thickness 0.35 mm; Standard EN374; pictograms: yes) ○ Material: FKM; (thickness 0.4 mm; Standard EN374; pictograms: yes) • Eye protection: Safety goggles; if there is a risk of splashes (e.g. sampling): face shield <ul style="list-style-type: none"> ○ Safety goggles (use: aerosols, droplets; standard: EN166; pictograms: yes) ○ Face shield (use: aerosols, droplets; standard: EN166; pictograms: yes) • Skin and body protection: Wear suitable protective clothing; if there is a risk of large splashes (e.g. transfer): use protective apron. <ul style="list-style-type: none"> ○ Safety boots (high shoes): standard: EN13832; pictogram: yes ○ Long-sleeved protective clothing: standard: 13034; pictogram: yes ○ Protective apron: Standard: EN14605: type 3; pictograms: yes • Respiratory protection: In case of spraying (not closed system), respiratory protection equipment is required. <ul style="list-style-type: none"> ○ Full-face mask (filter type: A, high boiling point organic compound (> 65 °C); condition: aerosols, droplets; standard: EN 140) • In case of spills/calamities: Face shield, safety boots, long-sleeved protective clothing, protective gloves.
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Conditions of use applicable to all contributing scenarios

Liquid
Covers concentrations up to 100 %
Covers use up to 8 h/day
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personal operating under supervision.; Ensure regular inspection, cleaning and maintenance of equipment and machines.; Clear spills immediately.; Ensure daily cleaning of the equipment.
Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40 °C

2.3. Exposure estimation and reference to its source

A quantitative risk assessment is not required based on the hazard profile of the substance (only acute local effects applicable).

2.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Scaling is not considered appropriate for this substance as no quantitative risk assessment was performed and a generic set of risk management measures is proposed.

3. ES 3: Formulation or re-packing

3.1. Title section

ES name: *Formulation into solid matrix*

Environment	
1: <i>Formulation into solid matrix</i>	ERC 3
Worker	
2: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions	PROC 1
3: <i>Chemical production in closed continuous process with occasional controlled exposure</i>	PROC 2
4: <i>Formulation in closed batch processes with occasional controlled exposure</i>	PROC 3
5: <i>Chemical production where opportunity for exposure arises</i>	PROC 4
6: <i>Mixing or blending in batch processes</i>	PROC 5
7: Calendering operations	PROC 6
8: <i>Transfer of substance or mixture at non-dedicated facilities</i>	PROC 8a
9: <i>Transfer of substance or mixture at dedicated facilities</i>	PROC 8b
10: <i>Transfer of substance or mixture into small containers</i>	PROC 9
11: Treatment of articles by dipping and pouring	PROC 13
12: Tableting, compression, extrusion, pelettisation, granulation	PROC 14
13: <i>Use as laboratory reagent</i>	PROC 15
14: Manual activities involving hand contact	PROC 19
15: Handling of solid inorganic substances at ambient temperature	PROC 26
16: <i>Manual maintenance (cleaning and repair) of machinery</i>	PROC 28

3.2. Conditions of use affecting exposure

3.2.1. Control of worker exposure

The substance is classified for serious eye damage and skin corrosion (moderate hazard, respectively) and additionally labelled as EUH071. Implementation of the following RMMs will ensure that risks due to the irritating properties are controlled to a level of no concern:

Risk management measures	
General risk management measures and advice for operating a closed system:	<ul style="list-style-type: none"> • Training of staff on good practice. • Good standard of personal hygiene. • Management/supervision in place to check that the RMMs in place are being used correctly and OCs followed
For handling the substance outside a closed system (e.g. sampling, cleaning, etc.) additional safety measures have to be adopted:	<ul style="list-style-type: none"> • Minimization of staff exposed • Segregation of the emitting process • Effective contaminant extraction • Good standard of general ventilation • Minimization of manual phases • Avoidance of contact with contaminated tools and objects • Regular cleaning of equipment and work area
Additional risk management measures and advice:	<ul style="list-style-type: none"> • Protective gloves: <ul style="list-style-type: none"> ○ Material: Butyl rubber, chloroprene rubber, polyvinylchloride (Permeation 6 (> 480 minutes); thickness 0.5 mm; standard

	<p>EN374; pictograms: yes);</p> <ul style="list-style-type: none"> ○ Material: Nitrile rubber (permeation 6 (> 480 minutes); thickness 0.35 mm; Standard EN374; pictograms: yes) ○ Material: FKM; (thickness 0.4 mm; Standard EN374; pictograms: yes) <ul style="list-style-type: none"> • Eye protection: Safety goggles; if there is a risk of splashes (e.g. sampling): face shield <ul style="list-style-type: none"> ○ Safety goggles (use: aerosols, droplets; standard: EN166; pictograms: yes) ○ Face shield (use: aerosols, droplets; standard: EN166; pictograms: yes) • Skin and body protection: Wear suitable protective clothing; if there is a risk of large splashes (e.g. transfer): use protective apron. <ul style="list-style-type: none"> ○ Safety boots (high shoes): standard: EN13832; pictogram: yes ○ Long-sleeved protective clothing: standard: 13034; pictogram: yes ○ Protective apron: Standard: EN14605: type 3; pictograms: yes • Respiratory protection: In case of spraying (not closed system), respiratory protection equipment is required. <ul style="list-style-type: none"> ○ Full-face mask (filter type: A, high boiling point organic compound (> 65 °C); condition: aerosols, droplets; standard: EN 140) • In case of spills/calamities: Face shield, safety boots, long-sleeved protective clothing, protective gloves.
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Conditions of use applicable to all contributing scenarios

Product (article) characteristics
Liquid
Covers concentrations up to 100 %
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 8 h/day
Technical and organisational conditions and measures
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personal operating under supervision.; Ensure regular inspection, cleaning and maintenance of equipment and machines.; Clear spills immediately.; Ensure daily cleaning of the equipment.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS.
Use suitable eye protection.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40 °C

3.3. Exposure estimation and reference to its source

A quantitative risk assessment is not required based on the hazard profile of the substance (only acute local effects applicable).

3.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Scaling is not considered appropriate for this substance as no quantitative risk assessment was performed and a generic set of risk management measures is proposed.

4. ES 4: Use at industrial sites; Various products; Various sectors

4.1. Title section

ES name: *Industrial use of L-(+)-lactic acid as a non-reactive processing aid*

Product category: Adhesives, Sealants (PC 1), Adsorbents (PC 2), Coatings and Paints, Thinners, paint removers (PC 9a), Fertilizers (PC 12), Metal surface treatment products (PC 14), Non-metal-surface treatment products (PC 15), Products such as ph-regulators, flocculants, precipitants, neutralization agents (PC 20), Laboratory Chemicals (PC 21), Lubricants, Greases, Release Products (PC 24), Metal Working Fluids (PC 25), Polishes and Wax Blends (PC 31), Washing and Cleaning Products (PC 35), Water softeners (PC 36), Water treatment chemicals (PC 37)

Sector of use: Agriculture, forestry, fishery (SU 1), Mining (without offshore industries) (SU 2a), Offshore industries (SU 2b), Manufacture of food products (SU 4), Manufacture of bulk, large scale chemicals (including petroleum products) (SU 8), Manufacture of fine chemicals (SU 9)

Environment	
1: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)	ERC 4
Worker	
2: <i>Chemical production in closed continuous process with occasional controlled exposure</i>	PROC 2
3: <i>Formulation in closed batch processes with occasional controlled exposure</i>	PROC 3
4: <i>Chemical production where opportunity for exposure arises</i>	PROC 4
5: <i>Mixing or blending in batch processes</i>	PROC 5
6: <i>Calendering operations</i>	PROC 6
7: <i>Industrial spraying</i>	PROC 7
8: <i>Transfer of substance or mixture at non-dedicated facilities</i>	PROC 8a
9: <i>Transfer of substance or mixture at dedicated facilities</i>	PROC 8b
10: <i>Transfer of substance or mixture into small containers</i>	PROC 9
11: <i>Roller application or brushing</i>	PROC 10
12: <i>Treatment of articles by dipping and pouring</i>	PROC 13
13: <i>Tabletting, compression, extrusion, pelletisation, granulation</i>	PROC 14
14: <i>Use as laboratory reagent</i>	PROC 15
15: <i>Using material as fuel sources, limited exposure to un-burned product to be expected</i>	PROC 16
16: <i>Lubrication at high energy conditions and in partly open process</i>	PROC 17
17: <i>General greasing/lubrication at high kinetic energy conditions</i>	PROC 18
18: <i>Hand-mixing with intimate contact and only PPE available</i>	PROC 19
19: <i>Heat and pressure transfer fluids in dispersive, professional use but closed systems</i>	PROC 20
20: <i>Low energy manipulation and handling of substances bound in/on materials or articles</i>	PROC 21
21: <i>High (mechanical) energy work-up of substances bound in materials and/or articles</i>	PROC 24
22: <i>Handling of solid inorganic substances at ambient temperature</i>	PROC 26
23: <i>Manual maintenance (cleaning and repair) of machinery</i>	PROC 28

4.2. Conditions of use affecting exposure

4.2.1. Control of worker exposure

The substance is classified for serious eye damage and skin corrosion (moderate hazard, respectively) and additionally labelled as EUH071. Implementation of the following RMMs will ensure that risks due to the irritating properties are controlled to a level of no concern:

Risk management measures	
General risk management measures and advice for operating a closed system:	<ul style="list-style-type: none"> • Training of staff on good practice. • Good standard of personal hygiene. • Management/supervision in place to check that the RMMs in place are being used correctly and OCs followed
For handling the substance outside a closed system (e.g. sampling, cleaning, etc.) additional safety measures have to be adopted:	<ul style="list-style-type: none"> • Minimization of staff exposed • Segregation of the emitting process • Effective contaminant extraction • Good standard of general ventilation • Minimization of manual phases • Avoidance of contact with contaminated tools and objects • Regular cleaning of equipment and work area
Additional risk management measures and advice:	<ul style="list-style-type: none"> • Protective gloves: <ul style="list-style-type: none"> ○ Material: Butyl rubber, chloroprene rubber, polyvinylchloride (Permeation 6 (> 480 minutes); thickness 0.5 mm; standard EN374; pictograms: yes); ○ Material: Nitrile rubber (permeation 6 (> 480 minutes); thickness 0.35 mm; Standard EN374; pictograms: yes) ○ Material: FKM; (thickness 0.4 mm; Standard EN374; pictograms: yes) • Eye protection: Safety goggles; if there is a risk of splashes (e.g. sampling): face shield <ul style="list-style-type: none"> ○ Safety goggles (use: aerosols, droplets; standard: EN166; pictograms: yes) ○ Face shield (use: aerosols, droplets; standard: EN166; pictograms: yes) • Skin and body protection: Wear suitable protective clothing; if there is a risk of large splashes (e.g. transfer): use protective apron. <ul style="list-style-type: none"> ○ Safety boots (high shoes): standard: EN13832; pictogram: yes ○ Long-sleeved protective clothing: standard: 13034; pictogram: yes ○ Protective apron: Standard: EN14605: type 3; pictograms: yes • Respiratory protection: In case of spraying (not closed system), respiratory protection equipment is required. <ul style="list-style-type: none"> ○ Full-face mask (filter type: A, high boiling point organic compound (> 65 °C); condition: aerosols, droplets; standard: EN 140) • In case of spills/calamities: Face shield, safety boots, long-sleeved protective clothing, protective gloves.

Conditions of use applicable to all contributing scenarios

Product (article) characteristics
Covers concentrations up to 100 %
Liquid
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 8 h/day
Technical and organisational conditions and measures
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personal operating under supervision.; Ensure regular inspection, cleaning and maintenance of equipment and

machines.; Clear spills immediately.; Ensure daily cleaning of the equipment.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS.
Use suitable eye protection.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40 °C

4.3. Exposure estimation and reference to its source

A quantitative risk assessment is not required based on the hazard profile of the substance (only acute local effects applicable).

4.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Scaling is not considered appropriate for this substance as no quantitative risk assessment was performed and a generic set of risk management measures is proposed.

5. ES 5: Use at industrial sites; Various products (PC 1, PC 3, PC 4, PC 8, PC 9a, PC 9b, PC 9c, PC 14, PC 15, PC 20, PC 21, PC 24, PC 25, PC 31, PC 35, PC 37, PC 38); Various sectors (SU 8, SU 9)

5.1. Title section

ES name: *Industrial use of L-(+)-lactic acid as a reactive processing aid*

Product category: Adhesives, Sealants (PC 1), Air care products (PC 3), Anti-Freeze and De-icing products (PC 4), Biocidal Products (PC 8), Coatings and Paints, Thinners, paint removers (PC 9a), Fillers, putties, plasters, modelling clay (PC 9b), Finger paints (PC 9c), Metal surface treatment products (PC 14), Non-metal-surface treatment products (PC 15), Products such as ph-regulators, flocculants, precipitants, neutralization agents (PC 20), Laboratory Chemicals (PC 21), Lubricants, Greases, Release Products (PC 24), Metal Working Fluids (PC 25), Polishes and Wax Blends (PC 31), Washing and Cleaning Products (PC 35), Water treatment chemicals (PC 37), Welding and soldering products, flux products (PC 38)

Sector of use: Manufacture of bulk, large scale chemicals (including petroleum products) (SU 8), Manufacture of fine chemicals (SU 9)

Environment	
1: <i>Use of reactive processing aid (no inclusion)</i>	ERC 6b
Worker	
2: <i>Formulation in closed batch processes with occasional controlled exposure</i>	PROC 3
3: <i>Chemical production where opportunity for exposure arises</i>	PROC 4
4: <i>Mixing or blending in batch processes</i>	PROC 5
5: <i>Calendering operations</i>	PROC 6
6: <i>Industrial spraying</i>	PROC 7
7: <i>Transfer of substance or mixture at non-dedicated facilities</i>	PROC 8a
8: <i>Transfer of substance or mixture at dedicated facilities</i>	PROC 8b
9: <i>Transfer of substance or mixture into small containers</i>	PROC 9
10: <i>Roller application or brushing</i>	PROC 10
11: <i>Treatment of articles by dipping and pouring</i>	PROC 13
12: <i>Tabletting, compression, extrusion, pelletisation, granulation</i>	PROC 14
13: <i>Use as laboratory reagent</i>	PROC 15
14: <i>Using material as fuel sources, limited exposure to un-burned product to be expected</i>	PROC 16
15: <i>Lubrication at high energy conditions and in partly open process</i>	PROC 17
16: <i>General greasing/lubrication at high kinetic energy conditions</i>	PROC 18
17: <i>Hand-mixing with intimate contact and only PPE available</i>	PROC 19
18: <i>Heat and pressure transfer fluids in dispersive, professional use but closed systems</i>	PROC 20
19: <i>Low energy manipulation and handling of substances bound in/on materials or articles</i>	PROC 21
20: <i>High (mechanical) energy work-up of substances bound in materials and/or articles</i>	PROC 24
21: <i>Handling of solid inorganic substances at ambient temperature</i>	PROC 26
22: <i>Manual maintenance (cleaning and repair) of machinery</i>	PROC 28

5.2. Conditions of use affecting exposure

5.2.1. Control of worker exposure

The substance is classified for serious eye damage and skin corrosion (moderate hazard, respectively) and additionally labelled as EUH071. Implementation of the following RMMs will ensure that risks due to the irritating properties are controlled to a level of no concern:

Risk management measures	
General risk management measures and advice for operating a closed system:	<ul style="list-style-type: none"> • Training of staff on good practice. • Good standard of personal hygiene. • Management/supervision in place to check that the RMMs in place are being used correctly and OCs followed
For handling the substance outside a closed system (e.g. sampling, cleaning, etc.) additional safety measures have to be adopted:	<ul style="list-style-type: none"> • Minimization of staff exposed • Segregation of the emitting process • Effective contaminant extraction • Good standard of general ventilation • Minimization of manual phases • Avoidance of contact with contaminated tools and objects • Regular cleaning of equipment and work area
Additional risk management measures and advice:	<ul style="list-style-type: none"> • Protective gloves: <ul style="list-style-type: none"> ○ Material: Butyl rubber, chloroprene rubber, polyvinylchloride (Permeation 6 (> 480 minutes); thickness 0.5 mm; standard EN374; pictograms: yes); ○ Material: Nitrile rubber (permeation 6 (> 480 minutes); thickness 0.35 mm; Standard EN374; pictograms: yes) ○ Material: FKM; (thickness 0.4 mm; Standard EN374; pictograms: yes) • Eye protection: Safety goggles; if there is a risk of splashes (e.g. sampling): face shield <ul style="list-style-type: none"> ○ Safety goggles (use: aerosols, droplets; standard: EN166; pictograms: yes) ○ Face shield (use: aerosols, droplets; standard: EN166; pictograms: yes) • Skin and body protection: Wear suitable protective clothing; if there is a risk of large splashes (e.g. transfer): use protective apron. <ul style="list-style-type: none"> ○ Safety boots (high shoes): standard: EN13832; pictogram: yes ○ Long-sleeved protective clothing: standard: 13034; pictogram: yes ○ Protective apron: Standard: EN14605: type 3; pictograms: yes • Respiratory protection: In case of spraying (not closed system), respiratory protection equipment is required. <ul style="list-style-type: none"> ○ Full-face mask (filter type: A, high boiling point organic compound (> 65 °C); condition: aerosols, droplets; standard: EN 140) • In case of spills/calamities: Face shield, safety boots, long-sleeved protective clothing, protective gloves.

Conditions of use applicable to all contributing scenarios

Product (article) characteristics
Covers concentrations up to 100 %
Liquid
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 8 h/day
Technical and organisational conditions and measures
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personal operating under supervision.; Ensure regular inspection, cleaning and maintenance of equipment and

machines.; Clear spills immediately.; Ensure daily cleaning of the equipment.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS.
Use suitable eye protection.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40 °C

5.3. Exposure estimation and reference to its source

A quantitative risk assessment is not required based on the hazard profile of the substance (only acute local effects applicable).

5.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Scaling is not considered appropriate for this substance as no quantitative risk assessment was performed and a generic set of risk management measures is proposed.

6. ES 6: Use at industrial sites; Various products (PC 4, PC 21, PC 24); Various sectors (SU 2a, SU 2b, SU 17, SU 19, SU 23)

6.1. Title section

ES name: *Industrial use of L-(+)-lactic acid in functional fluids*

Product category: Anti-Freeze and De-icing products (PC 4), Laboratory Chemicals (PC 21), Lubricants, Greases, Release Products (PC 24)

Sector of use: Mining (without offshore industries) (SU 2a), Offshore industries (SU 2b), General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment. (SU 17), Building and construction work (SU 19), Electricity, steam, gas water supply and sewage treatment (SU 23)

Environment	
1: <i>Use of functional fluid</i>	ERC 7
Worker	
2: <i>Chemical production where opportunity for exposure arises</i>	PROC 4
3: <i>Mixing or blending in batch processes</i>	PROC 5
4: <i>Industrial spraying</i>	PROC 7
5: <i>Transfer of substance or mixture at non-dedicated facilities</i>	PROC 8a
6: <i>Transfer of substance or mixture at dedicated facilities</i>	PROC 8b
7: <i>Transfer of substance or mixture into small containers</i>	PROC 9
8: <i>Roller application or brushing</i>	PROC 10
9: <i>Treatment of articles by dipping and pouring</i>	PROC 13
10: <i>Tabletting, compression, extrusion, pelletisation, granulation</i>	PROC 14
11: <i>Use as laboratory reagent</i>	PROC 15
12: <i>Using material as fuel sources, limited exposure to un-burned product to be expected</i>	PROC 16
13: <i>Lubrication at high energy conditions and in partly open process</i>	PROC 17
14: <i>General greasing/lubrication at high kinetic energy conditions</i>	PROC 18
15: <i>Hand-mixing with intimate contact and only PPE available</i>	PROC 19
16: <i>Heat and pressure transfer fluids in dispersive, professional use but closed systems</i>	PROC 20
17: <i>High (mechanical) energy work-up of substances bound in materials and/or articles</i>	PROC 24
18: <i>Handling of solid inorganic substances at ambient temperature</i>	PROC 26
19: <i>Manual maintenance (cleaning and repair) of machinery</i>	PROC 28

6.2. Conditions of use affecting exposure

6.2.1. Control of worker exposure

The substance is classified for serious eye damage and skin corrosion (moderate hazard, respectively) and additionally labelled as EUH071. Implementation of the following RMMs will ensure that risks due to the irritating properties are controlled to a level of no concern:

Risk management measures	
General risk management measures and advice for operating a closed system:	<ul style="list-style-type: none"> • Training of staff on good practice. • Good standard of personal hygiene. • Management/supervision in place to check that the RMMs in place are being used correctly and OCs followed

For handling the substance outside a closed system (e.g. sampling, cleaning, etc.) additional safety measures have to be adopted:	<ul style="list-style-type: none"> • Minimization of staff exposed • Segregation of the emitting process • Effective contaminant extraction • Good standard of general ventilation • Minimization of manual phases • Avoidance of contact with contaminated tools and objects • Regular cleaning of equipment and work area
Additional risk management measures and advice:	<ul style="list-style-type: none"> • Protective gloves: <ul style="list-style-type: none"> ○ Material: Butyl rubber, chloroprene rubber, polyvinylchloride (Permeation 6 (> 480 minutes); thickness 0.5 mm; standard EN374; pictograms: yes); ○ Material: Nitrile rubber (permeation 6 (> 480 minutes); thickness 0.35 mm; Standard EN374; pictograms: yes) ○ Material: FKM; (thickness 0.4 mm; Standard EN374; pictograms: yes) • Eye protection: Safety goggles; if there is a risk of splashes (e.g. sampling): face shield <ul style="list-style-type: none"> ○ Safety goggles (use: aerosols, droplets; standard: EN166; pictograms: yes) ○ Face shield (use: aerosols, droplets; standard: EN166; pictograms: yes) • Skin and body protection: Wear suitable protective clothing; if there is a risk of large splashes (e.g. transfer): use protective apron. <ul style="list-style-type: none"> ○ Safety boots (high shoes): standard: EN13832; pictogram: yes ○ Long-sleeved protective clothing: standard: 13034; pictogram: yes ○ Protective apron: Standard: EN14605: type 3; pictograms: yes • Respiratory protection: In case of spraying (not closed system), respiratory protection equipment is required. <ul style="list-style-type: none"> ○ Full-face mask (filter type: A, high boiling point organic compound (> 65 °C); condition: aerosols, droplets; standard: EN 140) • In case of spills/calamities: Face shield, safety boots, long-sleeved protective clothing, protective gloves.

Conditions of use applicable to all contributing scenarios

Product (article) characteristics
Covers concentrations up to 100 %
Liquid
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 8 h/day
Technical and organisational conditions and measures
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personal operating under supervision.; Ensure regular inspection, cleaning and maintenance of equipment and machines.; Clear spills immediately.; Ensure daily cleaning of the equipment.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS.
Use suitable eye protection.
Other conditions affecting workers exposure
Indoor use

Assumes process temperature up to 40 °C

6.3. Exposure estimation and reference to its source

A quantitative risk assessment is not required based on the hazard profile of the substance (only acute local effects applicable).

6.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Scaling is not considered appropriate for this substance as no quantitative risk assessment was performed and a generic set of risk management measures is proposed.

7. ES 7: Use at industrial sites; Various products (PC 1, PC 9a, PC 18, PC 20, PC 23, PC 26, PC 32, PC 34); Various sectors (SU 4, SU 5, SU 6a, SU 6b, SU 7, SU 11, SU 12, SU 13, SU 18)

7.1. Title section

ES name: *Industrial use of L-(+)-lactic acid for producing articles*

Product category: Adhesives, Sealants (PC 1), Coatings and Paints, Thinners, paint removers (PC 9a), Ink and Toners (PC 18), Products such as ph-regulators, flocculants, precipitants, neutralization agents (PC 20), Leather treatment products (PC 23), Paper and board treatment products (PC 26), Polymer Preparations and Compounds (PC 32), Textile dyes and impregnating products (PC 34)

Sector of use: Manufacture of food products (SU 4), Manufacture of textiles, leather, fur (SU 5), Manufacture of wood and wood products (SU 6a), Manufacture of pulp, paper and paper products (SU 6b), Printing and reproduction of recorded media (SU 7), Manufacture of rubber products (SU 11), Manufacture of plastics products, including compounding and conversion (SU 12), Manufacture of other non-metallic mineral products, e.g. plasters, cement (SU 13), Manufacture of furniture (SU 18)

Environment	
1: Use leading to inclusion into/onto article	ERC 5
Worker	
2: Mixing or blending in batch processes	PROC 5
3: Industrial spraying	PROC 7
4: Transfer of substance or mixture at non-dedicated facilities	PROC 8a
5: Transfer of substance or mixture at dedicated facilities	PROC 8b
6: Roller application or brushing	PROC 10
7: Treatment of articles by dipping and pouring	PROC 13
8: Manual maintenance (cleaning and repair) of machinery	PROC 28
Subsequent service life exposure scenario(s)	
ES 18: Service life (worker at industrial site); Various articles	
ES 19: Service life (worker at industrial site); Various articles (AC 0, AC 1, AC 7, AC 10, AC 11, AC 13)	
ES 20: Service life (professional worker); Various articles (AC 4a, AC 4g)	
ES 21: Service life (consumers); Various articles	

7.2. Conditions of use affecting exposure

7.2.1. Control of worker exposure

The substance is classified for serious eye damage and skin corrosion (moderate hazard, respectively) and additionally labelled as EUH071. Implementation of the following RMMs will ensure that risks due to the irritating properties are controlled to a level of no concern:

Risk management measures	
General risk management measures and advice for operating a closed system:	<ul style="list-style-type: none"> • Training of staff on good practice. • Good standard of personal hygiene. • Management/supervision in place to check that the RMMs in place are being used correctly and OCs followed
For handling the substance outside a closed system (e.g. sampling,	<ul style="list-style-type: none"> • Minimization of staff exposed • Segregation of the emitting process

cleaning, etc.) additional safety measures have to be adopted:	<ul style="list-style-type: none"> • Effective contaminant extraction • Good standard of general ventilation • Minimization of manual phases • Avoidance of contact with contaminated tools and objects • Regular cleaning of equipment and work area
Additional risk management measures and advice:	<ul style="list-style-type: none"> • Protective gloves: <ul style="list-style-type: none"> ○ Material: Butyl rubber, chloroprene rubber, polyvinylchloride (Permeation 6 (> 480 minutes); thickness 0.5 mm; standard EN374; pictograms: yes); ○ Material: Nitrile rubber (permeation 6 (> 480 minutes); thickness 0.35 mm; Standard EN374; pictograms: yes) ○ Material: FKM; (thickness 0.4 mm; Standard EN374; pictograms: yes) • Eye protection: Safety goggles; if there is a risk of splashes (e.g. sampling): face shield <ul style="list-style-type: none"> ○ Safety goggles (use: aerosols, droplets; standard: EN166; pictograms: yes) ○ Face shield (use: aerosols, droplets; standard: EN166; pictograms: yes) • Skin and body protection: Wear suitable protective clothing; if there is a risk of large splashes (e.g. transfer): use protective apron. <ul style="list-style-type: none"> ○ Safety boots (high shoes): standard: EN13832; pictogram: yes ○ Long-sleeved protective clothing: standard: 13034; pictogram: yes ○ Protective apron: Standard: EN14605: type 3; pictograms: yes • Respiratory protection: In case of spraying (not closed system), respiratory protection equipment is required. <ul style="list-style-type: none"> ○ Full-face mask (filter type: A, high boiling point organic compound (> 65 °C); condition: aerosols, droplets; standard: EN 140) • In case of spills/calamities: Face shield, safety boots, long-sleeved protective clothing, protective gloves.

Conditions of use applicable to all contributing scenarios

Product (article) characteristics
Covers concentrations up to 100 %
Liquid
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 8 h/day
Technical and organisational conditions and measures
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personal operating under supervision.; Ensure regular inspection, cleaning and maintenance of equipment and machines.; Clear spills immediately.; Ensure daily cleaning of the equipment.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS.
Use suitable eye protection.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40 °C

7.3. Exposure estimation and reference to its source

A quantitative risk assessment is not required based on the hazard profile of the substance (only acute local effects applicable).

7.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Scaling is not considered appropriate for this substance as no quantitative risk assessment was performed and a generic set of risk management measures is proposed.

8. ES 8: Use at industrial sites; Various products; Various sectors

8.1. Title section

ES name: *Industrial use as process regulator in polymerisation processes*

Product category: Coatings and Paints, Thinners, paint removers (PC 9a), Non-metal-surface treatment products (PC 15), Products such as ph-regulators, flocculants, precipitants, neutralization agents (PC 20), Laboratory Chemicals (PC 21), Washing and Cleaning Products (PC 35), Water treatment chemicals (PC 37)

Sector of use: Manufacture of bulk, large scale chemicals (including petroleum products) (SU 8), Manufacture of fine chemicals (SU 9), Manufacture of plastics products, including compounding and conversion (SU 12)

Environment	
1: <i>Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers</i>	ERC 6d
Worker	
2: <i>Formulation in closed batch processes with occasional controlled exposure</i>	PROC 3
3: <i>Chemical production where opportunity for exposure arises</i>	PROC 4
4: <i>Mixing or blending in batch processes</i>	PROC 5
5: <i>Calendering operations</i>	PROC 6
6: <i>Transfer of substance or mixture at non-dedicated facilities</i>	PROC 8a
7: <i>Transfer of substance or mixture at dedicated facilities</i>	PROC 8b
8: <i>Transfer of substance or mixture into small containers</i>	PROC 9
9: <i>Use as laboratory reagent</i>	PROC 15
10: <i>Low energy manipulation and handling of substances bound in/on materials or articles</i>	PROC 21
11: <i>Handling of solid inorganic substances at ambient temperature</i>	PROC 26
12: <i>Manual maintenance (cleaning and repair) of machinery</i>	PROC 28

8.2. Conditions of use affecting exposure

8.2.1. Control of worker exposure

The substance is classified for serious eye damage and skin corrosion (moderate hazard, respectively) and additionally labelled as EUH071. Implementation of the following RMMs will ensure that risks due to the irritating properties are controlled to a level of no concern:

Risk management measures	
General risk management measures and advice for operating a closed system:	<ul style="list-style-type: none"> • Training of staff on good practice. • Good standard of personal hygiene. • Management/supervision in place to check that the RMMs in place are being used correctly and OCs followed
For handling the substance outside a closed system (e.g. sampling, cleaning, etc.) additional safety measures have to be adopted:	<ul style="list-style-type: none"> • Minimization of staff exposed • Segregation of the emitting process • Effective contaminant extraction • Good standard of general ventilation • Minimization of manual phases • Avoidance of contact with contaminated tools and objects • Regular cleaning of equipment and work area
Additional risk management measures and advice:	<ul style="list-style-type: none"> • Protective gloves: <ul style="list-style-type: none"> ○ Material: Butyl rubber, chloroprene rubber, polyvinylchloride

	<p>(Permeation 6 (> 480 minutes); thickness 0.5 mm; standard EN374; pictograms: yes);</p> <ul style="list-style-type: none"> ○ Material: Nitrile rubber (permeation 6 (> 480 minutes); thickness 0.35 mm; Standard EN374; pictograms: yes) ○ Material: FKM; (thickness 0.4 mm; Standard EN374; pictograms: yes) <ul style="list-style-type: none"> • Eye protection: Safety goggles; if there is a risk of splashes (e.g. sampling): face shield <ul style="list-style-type: none"> ○ Safety goggles (use: aerosols, droplets; standard: EN166; pictograms: yes) ○ Face shield (use: aerosols, droplets; standard: EN166; pictograms: yes) • Skin and body protection: Wear suitable protective clothing; if there is a risk of large splashes (e.g. transfer): use protective apron. <ul style="list-style-type: none"> ○ Safety boots (high shoes): standard: EN13832; pictogram: yes ○ Long-sleeved protective clothing: standard: 13034; pictogram: yes ○ Protective apron: Standard: EN14605: type 3; pictograms: yes • Respiratory protection: In case of spraying (not closed system), respiratory protection equipment is required. <ul style="list-style-type: none"> ○ Full-face mask (filter type: A, high boiling point organic compound (> 65 °C); condition: aerosols, droplets; standard: EN 140) • In case of spills/calamities: Face shield, safety boots, long-sleeved protective clothing, protective gloves.
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Conditions of use applicable to all contributing scenarios

Product (article) characteristics
Liquid
Covers concentrations up to 100 %
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 8 h/day
Technical and organisational conditions and measures
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personal operating under supervision.; Ensure regular inspection, cleaning and maintenance of equipment and machines.; Clear spills immediately.; Ensure daily cleaning of the equipment.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS.
Use suitable eye protection.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40 °C

8.3. Exposure estimation and reference to its source

A quantitative risk assessment is not required based on the hazard profile of the substance (only acute local effects applicable).

8.4. Guidance to DU to evaluate whether he works inside the

boundaries set by the ES

Scaling is not considered appropriate for this substance as no quantitative risk assessment was performed and a generic set of risk management measures is proposed.

9. ES 9: Use at industrial sites; Various products; Various sectors

9.1. Title section

ES name: *Industrial use as intermediate*

Product category: Adsorbents (PC 2), Coatings and Paints, Thinners, paint removers (PC 9a), Non-metal-surface treatment products (PC 15), Products such as ph-regulators, flocculants, precipitants, neutralization agents (PC 20), Laboratory Chemicals (PC 21), Washing and Cleaning Products (PC 35), Water softeners (PC 36), Water treatment chemicals (PC 37)

Sector of use: Manufacture of food products (SU 4), Manufacture of bulk, large scale chemicals (including petroleum products) (SU 8), Manufacture of fine chemicals (SU 9)

Environment	
1: <i>Use of intermediate</i>	ERC 6a
Worker	
2: <i>Formulation in closed batch processes with occasional controlled exposure</i>	PROC 3
3: <i>Chemical production where opportunity for exposure arises</i>	PROC 4
4: <i>Mixing or blending in batch processes</i>	PROC 5
5: <i>Calendering operations</i>	PROC 6
6: <i>Transfer of substance or mixture at non-dedicated facilities</i>	PROC 8a
7: <i>Transfer of substance or mixture at dedicated facilities</i>	PROC 8b
8: <i>Transfer of substance or mixture into small containers</i>	PROC 9
9: <i>Use as laboratory reagent</i>	PROC 15
10: <i>Low energy manipulation and handling of substances bound in/on materials or articles</i>	PROC 21
11: <i>Handling of solid inorganic substances at ambient temperature</i>	PROC 26
12: <i>Manual maintenance (cleaning and repair) of machinery</i>	PROC 28

9.2. Conditions of use affecting exposure

9.2.1. Control of worker exposure

The substance is classified for serious eye damage and skin corrosion (moderate hazard, respectively) and additionally labelled as EUH071. Implementation of the following RMMs will ensure that risks due to the irritating properties are controlled to a level of no concern:

Risk management measures	
General risk management measures and advice for operating a closed system:	<ul style="list-style-type: none"> • Training of staff on good practice. • Good standard of personal hygiene. • Management/supervision in place to check that the RMMs in place are being used correctly and OCs followed
For handling the substance outside a closed system (e.g. sampling, cleaning, etc.) additional safety measures have to be adopted:	<ul style="list-style-type: none"> • Minimization of staff exposed • Segregation of the emitting process • Effective contaminant extraction • Good standard of general ventilation • Minimization of manual phases • Avoidance of contact with contaminated tools and objects • Regular cleaning of equipment and work area
Additional risk management measures and advice:	<ul style="list-style-type: none"> • Protective gloves: <ul style="list-style-type: none"> ○ Material: Butyl rubber, chloroprene rubber, polyvinylchloride

	<p>(Permeation 6 (> 480 minutes); thickness 0.5 mm; standard EN374; pictograms: yes);</p> <ul style="list-style-type: none"> ○ Material: Nitrile rubber (permeation 6 (> 480 minutes); thickness 0.35 mm; Standard EN374; pictograms: yes) ○ Material: FKM; (thickness 0.4 mm; Standard EN374; pictograms: yes) <ul style="list-style-type: none"> • Eye protection: Safety goggles; if there is a risk of splashes (e.g. sampling): face shield <ul style="list-style-type: none"> ○ Safety goggles (use: aerosols, droplets; standard: EN166; pictograms: yes) ○ Face shield (use: aerosols, droplets; standard: EN166; pictograms: yes) • Skin and body protection: Wear suitable protective clothing; if there is a risk of large splashes (e.g. transfer): use protective apron. <ul style="list-style-type: none"> ○ Safety boots (high shoes): standard: EN13832; pictogram: yes ○ Long-sleeved protective clothing: standard: 13034; pictogram: yes ○ Protective apron: Standard: EN14605: type 3; pictograms: yes • Respiratory protection: In case of spraying (not closed system), respiratory protection equipment is required. <ul style="list-style-type: none"> ○ Full-face mask (filter type: A, high boiling point organic compound (> 65 °C); condition: aerosols, droplets; standard: EN 140) • In case of spills/calamities: Face shield, safety boots, long-sleeved protective clothing, protective gloves.
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Conditions of use applicable to all contributing scenarios

Product (article) characteristics
Liquid
Covers concentrations up to 100 %
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 8 h/day
Technical and organisational conditions and measures
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personal operating under supervision.; Ensure regular inspection, cleaning and maintenance of equipment and machines.; Clear spills immediately.; Ensure daily cleaning of the equipment.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS.
Use suitable eye protection.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40 °C

9.3. Exposure estimation and reference to its source

A quantitative risk assessment is not required based on the hazard profile of the substance (only acute local effects applicable).

9.4. Guidance to DU to evaluate whether he works inside the

boundaries set by the ES

Scaling is not considered appropriate for this substance as no quantitative risk assessment was performed and a generic set of risk management measures is proposed.

10. ES 10: Use at industrial sites; Other (PC 0)

10.1. Title section

ES name: *Industrial use of L-(+)-lactic acid as a monomer*

Product category: Other (PC 0)

Environment	
1: <i>Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article)</i>	ERC 6c
Worker	
2: <i>Chemical production in closed process without likelihood of exposure</i>	PROC 1
3: <i>Chemical production in closed continuous process with occasional controlled exposure</i>	PROC 2
4: <i>Manufacture in closed batch processes with occasional controlled exposure</i>	PROC 3
5: <i>Chemical production where opportunity for exposure arises</i>	PROC 4
6: <i>Mixing or blending in batch processes</i>	PROC 5
7: <i>Manual maintenance (cleaning and repair) of machinery</i>	PROC 28

10.2. Conditions of use affecting exposure

10.2.1. Control of worker exposure

The substance is classified for serious eye damage and skin corrosion (moderate hazard, respectively) and additionally labelled as EUH071. Implementation of the following RMMs will ensure that risks due to the irritating properties are controlled to a level of no concern:

Risk management measures	
General risk management measures and advice for operating a closed system:	<ul style="list-style-type: none"> • Training of staff on good practice. • Good standard of personal hygiene. • Management/supervision in place to check that the RMMs in place are being used correctly and OCs followed
For handling the substance outside a closed system (e.g. sampling, cleaning, etc.) additional safety measures have to be adopted:	<ul style="list-style-type: none"> • Minimization of staff exposed • Segregation of the emitting process • Effective contaminant extraction • Good standard of general ventilation • Minimization of manual phases • Avoidance of contact with contaminated tools and objects • Regular cleaning of equipment and work area
Additional risk management measures and advice:	<ul style="list-style-type: none"> • Protective gloves: <ul style="list-style-type: none"> ○ Material: Butyl rubber, chloroprene rubber, polyvinylchloride (Permeation 6 (> 480 minutes); thickness 0.5 mm; standard EN374; pictograms: yes); ○ Material: Nitrile rubber (permeation 6 (> 480 minutes); thickness 0.35 mm; Standard EN374; pictograms: yes) ○ Material: FKM; (thickness 0.4 mm; Standard EN374; pictograms: yes) • Eye protection: Safety goggles; if there is a risk of splashes (e.g. sampling): face shield <ul style="list-style-type: none"> ○ Safety goggles (use: aerosols, droplets; standard: EN166; pictograms: yes) ○ Face shield (use: aerosols, droplets; standard: EN166; pictograms: yes)

	<ul style="list-style-type: none"> • Skin and body protection: Wear suitable protective clothing; if there is a risk of large splashes (e.g. transfer): use protective apron. <ul style="list-style-type: none"> ○ Safety boots (high shoes): standard: EN13832; pictogram: yes ○ Long-sleeved protective clothing: standard: 13034; pictogram: yes ○ Protective apron: Standard: EN14605: type 3; pictograms: yes • Respiratory protection: In case of spraying (not closed system), respiratory protection equipment is required. <ul style="list-style-type: none"> ○ Full-face mask (filter type: A, high boiling point organic compound (> 65 °C); condition: aerosols, droplets; standard: EN 140) • In case of spills/calamities: Face shield, safety boots, long-sleeved protective clothing, protective gloves.
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Conditions of use applicable to all contributing scenarios

Product (article) characteristics
Covers concentrations up to 100 %
Liquid
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 8 h/day
Technical and organisational conditions and measures
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personal operating under supervision.; Ensure regular inspection, cleaning and maintenance of equipment and machines.; Clear spills immediately.; Ensure daily cleaning of the equipment.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS.
Use suitable eye protection.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40 °C

10.3. Exposure estimation and reference to its source

A quantitative risk assessment is not required based on the hazard profile of the substance (only acute local effects applicable).

10.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Scaling is not considered appropriate for this substance as no quantitative risk assessment was performed and a generic set of risk management measures is proposed.

11. ES 11: Use at industrial sites; Other (PC 0); Building and construction work (SU 19)

11.1. Title section

ES name: *Building and construction preparations*

Product category: Other (PC 0)

Sector of use: Building and construction work (SU 19)

Environment	
1: <i>Use leading to inclusion into/onto article</i>	ERC 5
Worker	
2: <i>Mixing or blending in batch processes</i>	PROC 5
3: <i>Transfer of substance or mixture at non-dedicated facilities</i>	PROC 8a
4: <i>Transfer of substance or mixture at dedicated facilities</i>	PROC 8b
5: <i>Transfer of substance or mixture into small containers</i>	PROC 9
6: <i>Manual maintenance (cleaning and repair) of machinery</i>	PROC 28
Subsequent service life exposure scenario(s)	
ES 18: Service life (worker at industrial site); Various articles	
ES 20: Service life (professional worker); Various articles (AC 4a, AC 4g)	
ES 21: Service life (consumers); Various articles	

11.2. Conditions of use affecting exposure

11.2.1. Control of worker exposure

The substance is classified for serious eye damage and skin corrosion (moderate hazard, respectively) and additionally labelled as EUH071. Implementation of the following RMMs will ensure that risks due to the irritating properties are controlled to a level of no concern:

Risk management measures	
General risk management measures and advice for operating a closed system:	<ul style="list-style-type: none"> • Training of staff on good practice. • Good standard of personal hygiene. • Management/supervision in place to check that the RMMs in place are being used correctly and OCs followed
For handling the substance outside a closed system (e.g. sampling, cleaning, etc.) additional safety measures have to be adopted:	<ul style="list-style-type: none"> • Minimization of staff exposed • Segregation of the emitting process • Effective contaminant extraction • Good standard of general ventilation • Minimization of manual phases • Avoidance of contact with contaminated tools and objects • Regular cleaning of equipment and work area
Additional risk management measures and advice:	<ul style="list-style-type: none"> • Protective gloves: <ul style="list-style-type: none"> ○ Material: Butyl rubber, chloroprene rubber, polyvinylchloride (Permeation 6 (> 480 minutes); thickness 0.5 mm; standard EN374; pictograms: yes); ○ Material: Nitrile rubber (permeation 6 (> 480 minutes); thickness 0.35 mm; Standard EN374; pictograms: yes) ○ Material: FKM; (thickness 0.4 mm; Standard EN374; pictograms: yes) • Eye protection: Safety goggles; if there is a risk of splashes (e.g. sampling): face shield

	<ul style="list-style-type: none"> ○ Safety goggles (use: aerosols, droplets; standard: EN166; pictograms: yes) ○ Face shield (use: aerosols, droplets; standard: EN166; pictograms: yes) • Skin and body protection: Wear suitable protective clothing; if there is a risk of large splashes (e.g. transfer): use protective apron. <ul style="list-style-type: none"> ○ Safety boots (high shoes): standard: EN13832; pictogram: yes ○ Long-sleeved protective clothing: standard: 13034; pictogram: yes ○ Protective apron: Standard: EN14605: type 3; pictograms: yes • Respiratory protection: In case of spraying (not closed system), respiratory protection equipment is required. <ul style="list-style-type: none"> ○ Full-face mask (filter type: A, high boiling point organic compound (> 65 °C); condition: aerosols, droplets; standard: EN 140) • In case of spills/calamities: Face shield, safety boots, long-sleeved protective clothing, protective gloves.
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Conditions of use applicable to all contributing scenarios

Product (article) characteristics
Covers concentrations up to 100 %
Liquid
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 8 h/day
Technical and organisational conditions and measures
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personal operating under supervision.; Ensure regular inspection, cleaning and maintenance of equipment and machines.; Clear spills immediately.; Ensure daily cleaning of the equipment.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS.
Use suitable eye protection.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40 °C

11.3. Exposure estimation and reference to its source

A quantitative risk assessment is not required based on the hazard profile of the substance (only acute local effects applicable).

11.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Scaling is not considered appropriate for this substance as no quantitative risk assessment was performed and a generic set of risk management measures is proposed.

12. ES 12: Widespread use by professional workers; Various products; Various sectors

12.1. Title section

ES name: *Professional use of L-(+)-lactic acid as a non-reactive processing aid*

Product category: Adhesives, Sealants (PC 1), Air care products (PC 3), Anti-Freeze and De-icing products (PC 4), Biocidal Products (PC 8), Coatings and Paints, Thinners, paint removers (PC 9a), Fillers, putties, plasters, modelling clay (PC 9b), Finger paints (PC 9c), Fertilizers (PC 12), Metal surface treatment products (PC 14), Non-metal-surface treatment products (PC 15), Products such as ph-regulators, flocculants, precipitants, neutralization agents (PC 20), Laboratory Chemicals (PC 21), Lubricants, Greases, Release Products (PC 24), Metal Working Fluids (PC 25), Polishes and Wax Blends (PC 31), Washing and Cleaning Products (PC 35), Welding and soldering products, flux products (PC 38)

Sector of use: Agriculture, forestry, fishery (SU 1), Health services (SU 20)

Environment	
1: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)	ERC 8d, ERC 8a
Worker	
2: <i>Formulation in closed batch processes with occasional controlled exposure</i>	PROC 3
3: <i>Chemical production where opportunity for exposure arises</i>	PROC 4
4: <i>Mixing or blending in batch processes</i>	PROC 5
5: <i>Industrial spraying</i>	PROC 7
6: <i>Transfer of substance or mixture at non-dedicated facilities</i>	PROC 8a
7: <i>Transfer of substance or mixture at dedicated facilities</i>	PROC 8b
8: <i>Transfer of substance or mixture into small containers</i>	PROC 9
9: <i>Roller application or brushing</i>	PROC 10
10: <i>Non industrial spraying</i>	PROC 11
11: <i>Treatment of articles by dipping and pouring</i>	PROC 13
12: <i>Tabletting, compression, extrusion, pelletisation, granulation</i>	PROC 14
13: <i>Use as laboratory reagent</i>	PROC 15
14: <i>Using material as fuel sources, limited exposure to un-burned product to be expected</i>	PROC 16
15: <i>Lubrication at high energy conditions in metal working operations</i>	PROC 17
16: <i>General greasing/lubrication at high kinetic energy conditions</i>	PROC 18
17: <i>Hand-mixing with intimate contact and only PPE available</i>	PROC 19
18: <i>Use of functional fluids in small devices</i>	PROC 20
19: <i>High (mechanical) energy work-up of substances bound in /on materials and/or articles</i>	PROC 24
20: <i>Handling of solid inorganic substances at ambient temperature</i>	PROC 26
21: <i>Manual maintenance (cleaning and repair) of machinery</i>	PROC 28

12.2. Conditions of use affecting exposure

12.2.1. Control of worker exposure

The substance is classified for serious eye damage and skin corrosion (moderate hazard, respectively) and additionally labelled as EUH071. Implementation of the following RMMS will ensure that risks due to the irritating properties are controlled to a level of no concern:

Risk management measures	
General risk management measures and advice for operating a closed system:	<ul style="list-style-type: none"> • Training of staff on good practice. • Good standard of personal hygiene. • Management/supervision in place to check that the RMMs in place are being used correctly and OCs followed
For handling the substance outside a closed system (e.g. sampling, cleaning, etc.) additional safety measures have to be adopted:	<ul style="list-style-type: none"> • Minimization of staff exposed • Segregation of the emitting process • Effective contaminant extraction • Good standard of general ventilation • Minimization of manual phases • Avoidance of contact with contaminated tools and objects • Regular cleaning of equipment and work area
Additional risk management measures and advice:	<ul style="list-style-type: none"> • Protective gloves: <ul style="list-style-type: none"> ○ Material: Butyl rubber, chloroprene rubber, polyvinylchloride (Permeation 6 (> 480 minutes); thickness 0.5 mm; standard EN374; pictograms: yes); ○ Material: Nitrile rubber (permeation 6 (> 480 minutes); thickness 0.35 mm; Standard EN374; pictograms: yes) ○ Material: FKM; (thickness 0.4 mm; Standard EN374; pictograms: yes) • Eye protection: Safety goggles; if there is a risk of splashes (e.g. sampling): face shield <ul style="list-style-type: none"> ○ Safety goggles (use: aerosols, droplets; standard: EN166; pictograms: yes) ○ Face shield (use: aerosols, droplets; standard: EN166; pictograms: yes) • Skin and body protection: Wear suitable protective clothing; if there is a risk of large splashes (e.g. transfer): use protective apron. <ul style="list-style-type: none"> ○ Safety boots (high shoes): standard: EN13832; pictogram: yes ○ Long-sleeved protective clothing: standard: 13034; pictogram: yes ○ Protective apron: Standard: EN14605: type 3; pictograms: yes • Respiratory protection: In case of spraying (not closed system), respiratory protection equipment is required. <ul style="list-style-type: none"> ○ Full-face mask (filter type: A, high boiling point organic compound (> 65 °C); condition: aerosols, droplets; standard: EN 140) • In case of spills/calamities: Face shield, safety boots, long-sleeved protective clothing, protective gloves.

Conditions of use applicable to all contributing scenarios

Product (article) characteristics
Covers concentrations up to 100 %
Liquid
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 8 h/day
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS.
Use suitable eye protection.
Other conditions affecting workers exposure

Indoor use
Assumes process temperature up to 40 °C

12.3. Exposure estimation and reference to its source

A quantitative risk assessment is not required based on the hazard profile of the substance (only acute local effects applicable).

12.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Scaling is not considered appropriate for this substance as no quantitative risk assessment was performed and a generic set of risk management measures is proposed.

13. ES 13: Widespread use by professional workers; Various products; Other

13.1. Title section

ES name: *Professional use of L-(+)-lactic acid as a reactive processing aid*

Product category: Adhesives, Sealants (PC 1), Air care products (PC 3), Anti-Freeze and De-icing products (PC 4), Biocidal Products (PC 8), Coatings and Paints, Thinners, paint removers (PC 9a), Fillers, putties, plasters, modelling clay (PC 9b), Finger paints (PC 9c), Fertilizers (PC 12), Metal surface treatment products (PC 14), Non-metal-surface treatment products (PC 15), Products such as ph-regulators, flocculants, precipitants, neutralization agents (PC 20), Laboratory Chemicals (PC 21), Lubricants, Greases, Release Products (PC 24), Metal Working Fluids (PC 25), Polishes and Wax Blends (PC 31), Washing and Cleaning Products (PC 35), Welding and soldering products, flux products (PC 38)

Sector of use: Other (SU 0)

Environment	
1: <i>Widespread use of reactive processing aid (no inclusion into or onto article, outdoor)</i>	ERC 8e, ERC 8b
Worker	
2: <i>Chemical production where opportunity for exposure arises</i>	PROC 4
3: <i>Mixing or blending in batch processes</i>	PROC 5
4: <i>Industrial spraying</i>	PROC 7
5: <i>Transfer of substance or mixture at non-dedicated facilities</i>	PROC 8a
6: <i>Transfer of substance or mixture at dedicated facilities</i>	PROC 8b
7: <i>Transfer of substance or mixture into small containers</i>	PROC 9
8: <i>Roller application or brushing</i>	PROC 10
9: <i>Non industrial spraying</i>	PROC 11
10: <i>Treatment of articles by dipping and pouring</i>	PROC 13
11: <i>Tabletting, compression, extrusion, pelletisation, granulation</i>	PROC 14
12: <i>Use as laboratory reagent</i>	PROC 15
13: <i>Using material as fuel sources, limited exposure to un-burned product to be expected</i>	PROC 16
14: <i>Lubrication at high energy conditions in metal working operations</i>	PROC 17
15: <i>General greasing/lubrication at high kinetic energy conditions</i>	PROC 18
16: <i>Hand-mixing with intimate contact and only PPE available</i>	PROC 19
17: <i>Use of functional fluids in small devices</i>	PROC 20
18: <i>High (mechanical) energy work-up of substances bound in /on materials and/or articles</i>	PROC 24
19: <i>Handling of solid inorganic substances at ambient temperature</i>	PROC 26
20: <i>Manual maintenance (cleaning and repair) of machinery</i>	PROC 28

13.2. Conditions of use affecting exposure

13.2.1. Control of worker exposure

The substance is classified for serious eye damage and skin corrosion (moderate hazard, respectively) and additionally labelled as EUH071. Implementation of the following RMMs will ensure that risks due to the irritating properties are controlled to a level of no concern:

Risk management measures	
General risk management measures	<ul style="list-style-type: none"> Training of staff on good practice.

and advice for operating a closed system:	<ul style="list-style-type: none"> • Good standard of personal hygiene. • Management/supervision in place to check that the RMMs in place are being used correctly and OCs followed
For handling the substance outside a closed system (e.g. sampling, cleaning, etc.) additional safety measures have to be adopted:	<ul style="list-style-type: none"> • Minimization of staff exposed • Segregation of the emitting process • Effective contaminant extraction • Good standard of general ventilation • Minimization of manual phases • Avoidance of contact with contaminated tools and objects • Regular cleaning of equipment and work area
Additional risk management measures and advice:	<ul style="list-style-type: none"> • Protective gloves: <ul style="list-style-type: none"> ○ Material: Butyl rubber, chloroprene rubber, polyvinylchloride (Permeation 6 (> 480 minutes); thickness 0.5 mm; standard EN374; pictograms: yes); ○ Material: Nitrile rubber (permeation 6 (> 480 minutes); thickness 0.35 mm; Standard EN374; pictograms: yes) ○ Material: FKM; (thickness 0.4 mm; Standard EN374; pictograms: yes) • Eye protection: Safety goggles; if there is a risk of splashes (e.g. sampling): face shield <ul style="list-style-type: none"> ○ Safety goggles (use: aerosols, droplets; standard: EN166; pictograms: yes) ○ Face shield (use: aerosols, droplets; standard: EN166; pictograms: yes) • Skin and body protection: Wear suitable protective clothing; if there is a risk of large splashes (e.g. transfer): use protective apron. <ul style="list-style-type: none"> ○ Safety boots (high shoes): standard: EN13832; pictogram: yes ○ Long-sleeved protective clothing: standard: 13034; pictogram: yes ○ Protective apron: Standard: EN14605: type 3; pictograms: yes • Respiratory protection: In case of spraying (not closed system), respiratory protection equipment is required. <ul style="list-style-type: none"> ○ Full-face mask (filter type: A, high boiling point organic compound (> 65 °C); condition: aerosols, droplets; standard: EN 140) • In case of spills/calamities: Face shield, safety boots, long-sleeved protective clothing, protective gloves.

Conditions of use applicable to all contributing scenarios

Product (article) characteristics
Covers concentrations up to 100 %
Liquid
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 8 h/day
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS.
Use suitable eye protection.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40 °C

13.3. Exposure estimation and reference to its source

A quantitative risk assessment is not required based on the hazard profile of the substance (only acute local effects applicable).

13.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Scaling is not considered appropriate for this substance as no quantitative risk assessment was performed and a generic set of risk management measures is proposed.

14. ES 14: Widespread use by professional workers; Various products; Various sectors

14.1. Title section

ES name: *Professional use of L-(+)-lactic acid in functional fluids*

Product category: Adhesives, Sealants (PC 1), Air care products (PC 3), Anti-Freeze and De-icing products (PC 4), Biocidal Products (PC 8), Coatings and Paints, Thinners, paint removers (PC 9a), Fillers, putties, plasters, modelling clay (PC 9b), Finger paints (PC 9c), Fertilizers (PC 12), Metal surface treatment products (PC 14), Non-metal-surface treatment products (PC 15), Products such as ph-regulators, flocculants, precipitants, neutralization agents (PC 20), Laboratory Chemicals (PC 21), Lubricants, Greases, Release Products (PC 24), Metal Working Fluids (PC 25), Polishes and Wax Blends (PC 31), Washing and Cleaning Products (PC 35), Water treatment chemicals (PC 37), Welding and soldering products, flux products (PC 38)

Sector of use: Other (SU 0), Agriculture, forestry, fishery (SU 1), Manufacture of bulk, large scale chemicals (including petroleum products) (SU 8), Manufacture of fine chemicals (SU 9)

Environment	
1: <i>Widespread use of functional fluid</i>	ERC 9b, ERC 9a
Worker	
2: <i>Formulation in closed batch processes with occasional controlled exposure</i>	PROC 3
3: <i>Chemical production where opportunity for exposure arises</i>	PROC 4
4: <i>Mixing or blending in batch processes</i>	PROC 5
5: <i>Calendering operations</i>	PROC 6
6: <i>Industrial spraying</i>	PROC 7
7: <i>Transfer of substance or mixture at non-dedicated facilities</i>	PROC 8a
8: <i>Transfer of substance or mixture at dedicated facilities</i>	PROC 8b
9: <i>Transfer of substance or mixture into small containers</i>	PROC 9
10: <i>Roller application or brushing</i>	PROC 10
11: <i>Non industrial spraying</i>	PROC 11
12: <i>Treatment of articles by dipping and pouring</i>	PROC 13
13: <i>Tabletting, compression, extrusion, pelletisation, granulation</i>	PROC 14
14: <i>Use as laboratory reagent</i>	PROC 15
15: <i>Using material as fuel sources, limited exposure to un-burned product to be expected</i>	PROC 16
16: <i>Lubrication at high energy conditions in metal working operations</i>	PROC 17
17: <i>General greasing/lubrication at high kinetic energy conditions</i>	PROC 18
18: <i>Hand-mixing with intimate contact and only PPE available</i>	PROC 19
19: <i>Use of functional fluids in small devices</i>	PROC 20
20: <i>Low energy manipulation and handling of substances bound in/on materials or articles</i>	PROC 21
21: <i>High (mechanical) energy work-up of substances bound in /on materials and/or articles</i>	PROC 24
22: <i>Handling of solid inorganic substances at ambient temperature</i>	PROC 26
23: <i>Manual maintenance (cleaning and repair) of machinery</i>	PROC 28

14.2. Conditions of use affecting exposure

14.2.1. Control of worker exposure

The substance is classified for serious eye damage and skin corrosion (moderate hazard, respectively) and additionally labelled as EUH071. Implementation of the following RMMs will ensure that risks due to the irritating properties are controlled to a level of no concern:

Risk management measures	
General risk management measures and advice for operating a closed system:	<ul style="list-style-type: none"> • Training of staff on good practice. • Good standard of personal hygiene. • Management/supervision in place to check that the RMMs in place are being used correctly and OCs followed
For handling the substance outside a closed system (e.g. sampling, cleaning, etc.) additional safety measures have to be adopted:	<ul style="list-style-type: none"> • Minimization of staff exposed • Segregation of the emitting process • Effective contaminant extraction • Good standard of general ventilation • Minimization of manual phases • Avoidance of contact with contaminated tools and objects • Regular cleaning of equipment and work area
Additional risk management measures and advice:	<ul style="list-style-type: none"> • Protective gloves: <ul style="list-style-type: none"> ○ Material: Butyl rubber, chloroprene rubber, polyvinylchloride (Permeation 6 (> 480 minutes); thickness 0.5 mm; standard EN374; pictograms: yes); ○ Material: Nitrile rubber (permeation 6 (> 480 minutes); thickness 0.35 mm; Standard EN374; pictograms: yes) ○ Material: FKM; (thickness 0.4 mm; Standard EN374; pictograms: yes) • Eye protection: Safety goggles; if there is a risk of splashes (e.g. sampling): face shield <ul style="list-style-type: none"> ○ Safety goggles (use: aerosols, droplets; standard: EN166; pictograms: yes) ○ Face shield (use: aerosols, droplets; standard: EN166; pictograms: yes) • Skin and body protection: Wear suitable protective clothing; if there is a risk of large splashes (e.g. transfer): use protective apron. <ul style="list-style-type: none"> ○ Safety boots (high shoes): standard: EN13832; pictogram: yes ○ Long-sleeved protective clothing: standard: 13034; pictogram: yes ○ Protective apron: Standard: EN14605: type 3; pictograms: yes • Respiratory protection: In case of spraying (not closed system), respiratory protection equipment is required. <ul style="list-style-type: none"> ○ Full-face mask (filter type: A, high boiling point organic compound (> 65 °C); condition: aerosols, droplets; standard: EN 140) • In case of spills/calamities: Face shield, safety boots, long-sleeved protective clothing, protective gloves.

Conditions of use applicable to all contributing scenarios

Product (article) characteristics
Covers concentrations up to 100 %
Liquid
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 8 h/day
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those

described for the hands.; For further specification, refer to section 8 of the SDS.
Use suitable eye protection.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40 °C

14.3. Exposure estimation and reference to its source

A quantitative risk assessment is not required based on the hazard profile of the substance (only acute local effects applicable).

14.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Scaling is not considered appropriate for this substance as no quantitative risk assessment was performed and a generic set of risk management measures is proposed.

15. ES 15: Widespread use by professional workers; Various products; Various sectors

15.1. Title section

ES name: *Professional use of L-(+)-lactic acid for producing articles*

Product category: Adhesives, Sealants (PC 1), Anti-Freeze and De-icing products (PC 4), Biocidal Products (PC 8), Fillers, putties, plasters, modelling clay (PC 9b), Finger paints (PC 9c), Non-metal-surface treatment products (PC 15), Products such as ph-regulators, flocculants, precipitants, neutralization agents (PC 20), Lubricants, Greases, Release Products (PC 24), Polishes and Wax Blends (PC 31)

Sector of use: Manufacture of food products (SU 4), Manufacture of textiles, leather, fur (SU 5), Manufacture of wood and wood products (SU 6a), Manufacture of pulp, paper and paper products (SU 6b), Printing and reproduction of recorded media (SU 7), Manufacture of rubber products (SU 11), Manufacture of plastics products, including compounding and conversion (SU 12), Manufacture of other non-metallic mineral products, e.g. plasters, cement (SU 13), Manufacture of furniture (SU 18)

Environment	
1: <i>Widespread use leading to inclusion into/onto article (outdoor)</i>	ERC 8f
Worker	
2: <i>Chemical production where opportunity for exposure arises</i>	PROC 4
3: <i>Mixing or blending in batch processes</i>	PROC 5
4: <i>Transfer of substance or mixture at non-dedicated facilities</i>	PROC 8a
5: <i>Transfer of substance or mixture at dedicated facilities</i>	PROC 8b
6: <i>Transfer of substance or mixture into small containers</i>	PROC 9
7: <i>Roller application or brushing</i>	PROC 10
8: <i>Non industrial spraying</i>	PROC 11
9: <i>Treatment of articles by dipping and pouring</i>	PROC 13
10: <i>Tabletting, compression, extrusion, pelletisation, granulation</i>	PROC 14
11: <i>Use as laboratory reagent</i>	PROC 15
12: <i>General greasing/lubrication at high kinetic energy conditions</i>	PROC 18
13: <i>Hand-mixing with intimate contact and only PPE available</i>	PROC 19
14: <i>Handling of solid inorganic substances at ambient temperature</i>	PROC 26
15: <i>Manual maintenance (cleaning and repair) of machinery</i>	PROC 28
Subsequent service life exposure scenario(s)	
ES 18: Service life (worker at industrial site); Various articles	
ES 19: Service life (worker at industrial site); Various articles (AC 0, AC 1, AC 7, AC 10, AC 11, AC 13)	
ES 21: Service life (consumers); Various articles	

15.2. Conditions of use affecting exposure

15.2.1. Control of worker exposure

The substance is classified for serious eye damage and skin corrosion (moderate hazard, respectively) and additionally labelled as EUH071. Implementation of the following RMMs will ensure that risks due to the irritating properties are controlled to a level of no concern:

Risk management measures	
General risk management measures and advice for operating a closed	<ul style="list-style-type: none"> • Training of staff on good practice. • Good standard of personal hygiene.

system:	<ul style="list-style-type: none"> • Management/supervision in place to check that the RMMs in place are being used correctly and OCs followed
For handling the substance outside a closed system (e.g. sampling, cleaning, etc.) additional safety measures have to be adopted:	<ul style="list-style-type: none"> • Minimization of staff exposed • Segregation of the emitting process • Effective contaminant extraction • Good standard of general ventilation • Minimization of manual phases • Avoidance of contact with contaminated tools and objects • Regular cleaning of equipment and work area
Additional risk management measures and advice:	<ul style="list-style-type: none"> • Protective gloves: <ul style="list-style-type: none"> ○ Material: Butyl rubber, chloroprene rubber, polyvinylchloride (Permeation 6 (> 480 minutes); thickness 0.5 mm; standard EN374; pictograms: yes); ○ Material: Nitrile rubber (permeation 6 (> 480 minutes); thickness 0.35 mm; Standard EN374; pictograms: yes) ○ Material: FKM; (thickness 0.4 mm; Standard EN374; pictograms: yes) • Eye protection: Safety goggles; if there is a risk of splashes (e.g. sampling): face shield <ul style="list-style-type: none"> ○ Safety goggles (use: aerosols, droplets; standard: EN166; pictograms: yes) ○ Face shield (use: aerosols, droplets; standard: EN166; pictograms: yes) • Skin and body protection: Wear suitable protective clothing; if there is a risk of large splashes (e.g. transfer): use protective apron. <ul style="list-style-type: none"> ○ Safety boots (high shoes): standard: EN13832; pictogram: yes ○ Long-sleeved protective clothing: standard: 13034; pictogram: yes ○ Protective apron: Standard: EN14605: type 3; pictograms: yes • Respiratory protection: In case of spraying (not closed system), respiratory protection equipment is required. <ul style="list-style-type: none"> ○ Full-face mask (filter type: A, high boiling point organic compound (> 65 °C); condition: aerosols, droplets; standard: EN 140) • In case of spills/calamities: Face shield, safety boots, long-sleeved protective clothing, protective gloves.

Conditions of use applicable to all contributing scenarios

Product (article) characteristics
Covers concentrations up to 100 %
Liquid
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 8 h/day
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS.
Use suitable eye protection.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40 °C

15.3. Exposure estimation and reference to its source

A quantitative risk assessment is not required based on the hazard profile of the substance (only acute local effects applicable).

15.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Scaling is not considered appropriate for this substance as no quantitative risk assessment was performed and a generic set of risk management measures is proposed.