

SECCIÓN 1: Identificación de la sustancia o la mezcla y de la sociedad o la empresa

1.1. Identificador del producto

Forma del producto	: Mezcla
Nombre	: L-acido lactico
Nombre comercial	: PURAC® 50-100 PURAC® 80 FG PURAC® 88-LT, 88-T PURAC® FCC 50, FCC 80, FCC 85, FCC 88 PURAC® FIT Plus 90 PURAC® HiPure 51, HiPure 90 PURAC® HS 50, HS 80, HS 88, HS 90, HS 93, HS 95, HS 100 PURAC® PF 90 PURAC® PH 91 PURAC® UltraPure 50, UltraPure 90 PURAC® Vin PURAC® DEX 185 PURAC® HS Pure 90 PURAC® HS Pure 50

1.2. Usos pertinentes identificados de la sustancia o de la mezcla y usos desaconsejados

1.2.1. Usos pertinentes identificados

Uso de la sustancia/mezcla	: Aditivo alimentario Especialidad química Véase el anexo para obtener información más detallada.
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1.2.2. Usos desaconsejados:

Restricciones de utilización	: No se dispone de más información
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1.3. Datos del proveedor de la ficha de datos de seguridad

Proveedor

Purac Biochem bv
 Arkelsedijk 46
 4206 AC Gorinchem
 T +31 183 695695 - F +31 183 695604
sds@corbion.com

1.4. Teléfono de emergencia

Número de emergencia	: Call CHEMTREC: +1 703-741-5970 / 1-800-424-9300 CCN 18135
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País	Organismo/Empresa	Dirección	Número de emergencia	Comentario
España	Servicio de Información Toxicológica Instituto Nacional de Toxicología y Ciencias Forenses, Departamento de Madrid	C/José Echegaray nº4 28232 Las Rozas de Madrid	+34 91 562 04 20	(solo emergencias toxicológicas), Información en español (24h/365 días)

SECCIÓN 2: Identificación de los peligros

2.1. Clasificación de la sustancia o de la mezcla

Clasificación según Reglamento (UE) n° 1272/2008 [CLP]

Irritación o corrosión cutáneas, categoría 1, subcategoría 1C	H314
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Lesiones oculares graves o irritación ocular, categoría 1

H318

Texto completo de las frases H y EUH: ver sección 16

Efectos adversos fisicoquímicos, para la salud humana y el medio ambiente

Provoca quemaduras graves en la piel y lesiones oculares graves.

2.2. Elementos de la etiqueta

Etiquetado según el Reglamento (CE) n° 1272/2008 [CLP]

Pictogramas de peligro (CLP)



GHS05

Palabra de advertencia (CLP)

: Peligro

Contiene

: Ácido L-(+)-láctico

Indicaciones de peligro (CLP)

: H314 - Provoca quemaduras graves en la piel y lesiones oculares graves.

Consejos de prudencia (CLP)

: P260 - No respirar los vapores, la niebla.

P280 - Llevar guantes/prendas/gafas/máscara de protección.

P301+P330+P331 - EN CASO DE INGESTIÓN: Enjuagarse la boca. NO provocar el vómito.

P303+P361+P353 - EN CASO DE CONTACTO CON LA PIEL (o el pelo): Quitar inmediatamente todas las prendas contaminadas. Aclararse la piel con agua/ducharse.

P305+P351+P338 - EN CASO DE CONTACTO CON LOS OJOS: Aclarar cuidadosamente con agua durante varios minutos. Quitar las lentes de contacto, si lleva y resulta fácil. Seguir aclarando.

P363 - Lavar las prendas contaminadas antes de volver a usarlas.

Frases EUH

: EUH071 - Corrosivo para las vías respiratorias.

2.3. Otros peligros

Otros riesgos que no aparecen en la clasificación

: No hay información adicional.

Componente	
Ácido L-(+)-láctico (79-33-4)	Esta sustancia/mezcla no cumple los criterios PBT del anexo XIII del Reglamento REACH Esta sustancia/mezcla no cumple los criterios mPmB del anexo XIII del Reglamento REACH

La mezcla no contiene sustancias incluidas en la lista establecida con arreglo al artículo 59, apartado 1, por sus propiedades de alteración endocrina, o sustancias que se hayan identificado con propiedades de alteración endocrina con arreglo a los criterios establecidos en el Reglamento Delegado (UE) 2017/2100 de la Comisión o en el Reglamento (UE) 2018/605 de la Comisión

SECCIÓN 3: Composición/información sobre los componentes

3.1. Sustancias

No aplicable

3.2. Mezclas

Nombre	Identificador del producto	Konc. (% w/w)	Clasificación según Reglamento (UE) n° 1272/2008 [CLP]
Ácido L-(+)-láctico	(N° CAS) 79-33-4 (N° CE) 201-196-2 (N° Índice) 607-743-00-5 (REACH-no) 01-2119474164-39-0000; 01-2119474164-39-0013	≥ 50	Skin Corr. 1C, H314 Eye Dam. 1, H318

Texto completo de las frases H y EUH: ver sección 16

SECCIÓN 4: Primeros auxilios

4.1. Descripción de los primeros auxilios

Medidas de primeros auxilios general	: Llamar inmediatamente a un médico.
Medidas de primeros auxilios en caso de inhalación	: Transportar a la persona al aire libre y mantenerla en una posición que le facilite la respiración.
Medidas de primeros auxilios en caso de contacto con la piel	: Quitar inmediatamente todas las prendas contaminadas. Aclararse la piel con agua/ducharse. Llamar inmediatamente a un médico.
Medidas de primeros auxilios en caso de contacto con los ojos	: Aclarar cuidadosamente con agua durante varios minutos. Quitar las lentes de contacto, si lleva y resulta fácil. Seguir aclarando. Llamar inmediatamente a un médico.
Medidas de primeros auxilios en caso de ingestión	: Enjuagarse la boca. No provocar el vómito. Beber varios vasos de agua. Llamar inmediatamente a un médico.

4.2. Principales síntomas y efectos, agudos y retardados

Síntomas/efectos después de contacto con la piel	: Quemaduras. Enrojecimiento. Dolor.
Síntomas/efectos después del contacto con el ojo	: Sensación de quemazón. Dolor. Enrojecimiento. Lágrimas.
Síntomas/efectos después de ingestión	: Quemaduras en las mucosas gastrointestinales.

4.3. Indicación de toda atención médica y de los tratamientos especiales que deban dispensarse inmediatamente

Tratamiento sintomático. Si la respiración es dificultosa, administrar oxígeno. Mantener a la víctima bajo observación. La aparición de los síntomas puede retardarse.

SECCIÓN 5: Medidas de lucha contra incendios

5.1. Medios de extinción

Medios de extinción apropiados	: Agua pulverizada. Polvo seco. Espuma. Dióxido de carbono.
Medios de extinción no apropiados	: No utilizar chorros de agua concentrados, ya que podrían dispersar y extender el fuego.

5.2. Peligros específicos derivados de la sustancia o la mezcla

Peligro de incendio	: Sin riesgos de incendio.
Peligro de explosión	: Sin peligro directo de explosión.
Productos de descomposición peligrosos en caso de incendio	: En caso de incendio se forman humos peligrosos: Monóxido de carbono, Dióxido de carbono.

5.3. Recomendaciones para el personal de lucha contra incendios

Instrucciones para extinción de incendio	: Evacuar al personal a lugar seguro. Enfriar los contenedores expuestos mediante agua pulverizada o nebulizada. Evitar que las aguas residuales de extinción de incendios contaminen el medio ambiente.
Protección durante la extinción de incendios	: No intervenir sin equipo de protección adecuado. Aparato autónomo y aislante de protección respiratoria. Protección completa del cuerpo.

SECCIÓN 6: Medidas en caso de vertido accidental

6.1. Precauciones personales, equipo de protección y procedimientos de emergencia

6.1.1. Para el personal que no forma parte de los servicios de emergencia

Equipo de protección	: Llevar el equipo de protección individual recomendado.
Procedimientos de emergencia	: Evacuar el personal no necesario. Ventilar la zona de derrame. No toque ni camine sobre el producto derramado. Evitar respirar la niebla, los vapores. Evitar el contacto con los ojos y la piel.

6.1.2. Para el personal de emergencia

Equipo de protección : No intervenir sin equipo de protección adecuado. Para más información, ver sección 8 : "Control de la exposición-protección individual".

6.2. Precauciones relativas al medio ambiente

Evitar su liberación al medio ambiente.

6.3. Métodos y material de contención y de limpieza

Para retención : Detener la fuga, si no hay peligro en hacerlo. Confinar todo tipo de fugas o derrames mediante diques o productos absorbentes para evitar el desplazamiento y la entrada en el alcantarillado o cursos de agua.

Procedimientos de limpieza : Grandes cantidades: Cubrir el derrame con un material incombustible, p. e. arena, tierra o vermiculita. Barrer o recoger con pala y depositar en recipientes para su posterior eliminación. Avisar a las autoridades si el producto llega a los desagües o las conducciones públicas de agua. Cantidades pequeñas de vertido líquido: recoger con material absorbente incombustible y guardar en recipiente para eliminación. Después de la limpieza, eliminar los restos de producto con agua. Aclarar con agua abundante las superficies contaminadas. No devolver nunca el producto derramado a su recipiente de origen para una posible reutilización.

Otros datos : Eliminar los materiales o residuos sólidos en un centro autorizado.

6.4. Referencia a otras secciones

Para más información, ver sección 8 : "Control de la exposición-protección individual". Para más información, ver sección 13.

SECCIÓN 7: Manipulación y almacenamiento

7.1. Precauciones para una manipulación segura

Precauciones para una manipulación segura : El puesto de trabajo ha de estar bien ventilado. Evitar el contacto con los ojos y la piel. Llevar un equipo de protección individual. No respirar los vapores, la niebla. Manipular practicando una buena higiene industrial y aplicando procedimientos de seguridad.

Temperatura de manipulación : < 200 °C

Medidas de higiene : Lavar las prendas contaminadas antes de volver a usarlas. No comer, beber ni fumar durante su utilización. Lavarse las manos después de cualquier manipulación.

7.2. Condiciones de almacenamiento seguro, incluidas posibles incompatibilidades

Condiciones de almacenamiento : Consérvese el recipiente en lugar fresco y bien ventilado y manténgase bien cerrado. Guardar bajo llave.

Materiales incompatibles : Agente oxidante. Bases. Ácidos. Metales.

Temperatura de almacenamiento : < 200 °C

Lugar de almacenamiento : Almacenar de conformidad con la normativa local.

7.3. Usos específicos finales

Anexo.

SECCIÓN 8: Controles de exposición/protección individual

8.1. Parámetros de control

8.1.1 Valores límite nacionales de exposición profesional y biológicos

No se dispone de más información

8.1.2. Métodos de seguimiento recomendados

No se dispone de más información

8.1.3. Contaminantes del aire formados

No se dispone de más información

8.1.4. DNEL y PNEC

No se dispone de más información

8.1.5. Bandas de control

No se dispone de más información

8.2. Controles de la exposición

8.2.1. Controles técnicos apropiados

Controles técnicos apropiados:

Prever fuentes de emergencia para el lavado de ojos y duchas de seguridad en las áreas con riesgo de exposición. No exponer a temperaturas superiores a 200 °C / 392 °F. El puesto de trabajo ha de estar bien ventilado.

8.2.2. Equipos de protección personal

Equipo de protección individual:

Llevar el equipo de protección individual recomendado.

Símbolo/s del equipo de protección personal:



8.2.2.1. Protección de los ojos y la cara

Protección ocular:			
Gafas de seguridad. En caso de riesgo de proyección de líquido: Pantalla facial			
Tipo	Campo de aplicación	Características	Norma
Gafas de seguridad	Gotas, Aerosoles		EN 166
Pantalla facial	Gotas, Aerosoles		EN 166

8.2.2.2. Protección de la piel

Protección de la piel y del cuerpo:	
Llevar ropa de protección adecuada	
Tipo	Norma
Ropa de protección con mangas largas	EN 13034
Botas de seguridad (por encima de los tobillos)	EN 13832
Grandes cantidades, En caso de riesgo de proyección de líquido: Delantal	EN 14605

Protección de las manos:					
Guantes de protección					
Tipo	Material	Permeabilidad	Espesor (mm)	Penetración	Norma
Guantes de protección	Caucho butilo, Caucho cloropreno (CR), Cloruro de polivinilo (PVC)	6 (> 480 minutos)	0.5		EN 374

Guantes de protección	Caucho nitrílico (NBR)	6 (> 480 minutos)	0.35		EN 374
Guantes de protección	Fluoroelastómero (FKM)	6 (> 480 minutos)	0.4		EN 374

8.2.2.3. Protección de las vías respiratorias

Protección de las vías respiratorias:			
Durante las pulverizaciones, llevar un aparato respiratorio adecuado. Sistemas abiertos			
Aparato	Tipo de filtro	Condición	Norma
Máscara completa	Tipo A: Compuestos orgánicos con punto de ebullición elevado (>65°C)	Aerosoles, Gotas	EN 136, EN 14387

8.2.2.4. Peligros térmicos

No se dispone de más información

8.2.3. Control de la exposición ambiental

Control de la exposición ambiental:

Evitar su liberación al medio ambiente.

Otros datos:

Manipular practicando una buena higiene industrial y aplicando procedimientos de seguridad. No comer, beber ni fumar durante su utilización. Lavarse las manos después de cualquier manipulación. Evitar el contacto con la piel, los ojos y la ropa. Los trabajadores deben recibir formación sobre el uso y la manipulación adecuados de este producto, tal como lo exija la normativa aplicable. Limpiar frecuentemente el equipo, la zona de trabajo y la ropa.

SECCIÓN 9: Propiedades físicas y químicas

9.1. Información sobre propiedades físicas y químicas básicas

Forma/estado	: Líquido
Color	: Incoloro. Amarillento.
Apariencia	: Claro.
Olor	: Característico.
Umbral olfativo	: No disponible
Punto de fusión	: No disponible
Punto de solidificación	: No disponible
Punto de ebullición	: 120 – 130 °C
Inflamabilidad	: No disponible
Límites de explosión	: No disponible
Límite inferior de explosividad (LIE)	: No disponible
Límite superior de explosividad (LSE)	: No disponible
Punto de inflamación	: No disponible
Temperatura de autoignición	: > 400 °C 93% w/w
Temperatura de descomposición	: > 200 °C
pH	: < 1,2 (25°C)
Viscosidad, cinemática	: No disponible
Viscosidad, dinámica	: 5 – 60 mPa·s (25°C)
Solubilidad	: Miscible con agua.
Coefficiente de partición n-octanol/agua (Log Kow)	: No disponible
Coefficiente de partición n-octanol/agua (Log Pow)	: -0,62
Presión de vapor	: No disponible
Presión de vapor a 50°C	: No disponible
Densidad	: 1,2 g/cm ³
Densidad relativa	: No disponible
Densidad relativa de vapor a 20 °C	: No disponible

Tamaño de las partículas	: No aplicable
Distribución del tamaño de las partículas	: No aplicable
Forma de las partículas	: No aplicable
Relación de aspecto de las partículas	: No aplicable
Estado de agregación de las partículas	: No aplicable
Estado de aglomeración de las partículas	: No aplicable
Área de superficie específica de las partículas	: No aplicable
Generación de polvo de las partículas	: No aplicable

9.2. Otros datos

9.2.1. Información relativa a las clases de peligro físico

No se dispone de más información

9.2.2. Otras características de seguridad

Tensión superficial : 44 - 50 mN/m @50 - 90%

SECCIÓN 10: Estabilidad y reactividad

10.1. Reactividad

El producto no es reactivo en condiciones normales de utilización, almacenamiento y transporte.

10.2. Estabilidad química

Estable en condiciones normales.

10.3. Posibilidad de reacciones peligrosas

No se producen reacciones peligrosas conocidas en condiciones normales de utilización.

10.4. Condiciones que deben evitarse

No exponer a temperaturas superiores a 200 °C / 392 °F.

10.5. Materiales incompatibles

Agente oxidante. Bases. Ácidos. Metales.

10.6. Productos de descomposición peligrosos

En caso de incendio se forman humos peligrosos: Dióxido de carbono, Monóxido de carbono.

SECCIÓN 11: Información toxicológica

11.1. Información sobre las clases de peligro definidas en el Reglamento (CE) n.º 1272/2008

Toxicidad aguda (oral)	: No clasificado
Toxicidad aguda (cutánea)	: No clasificado
Toxicidad aguda (inhalación)	: No clasificado

Ácido L-(+)-láctico (79-33-4)	
DL50 oral rata	3543 mg/kg de peso corporal (EPA OPP 81-1 method)
DL50 cutáneo conejo	> 2000 mg/kg de peso corporal (EPA OPP 81-2 method)
CL50 Inhalación - Rata (Polvo/niebla)	> 7,94 mg/l/4h (método OCDE 403)

Corrosión o irritación cutáneas : Provoca quemaduras graves en la piel.
pH: < 1,2 (25°C)

Lesiones oculares graves o irritación ocular	: Provoca lesiones oculares graves. pH: < 1,2 (25°C)
Sensibilización respiratoria o cutánea	: No clasificado
Mutagenicidad en células germinales	: No clasificado
Carcinogenicidad	: No clasificado
Toxicidad para la reproducción	: No clasificado
Toxicidad específica en determinados órganos (STOT) – exposición única	: No clasificado
Toxicidad específica en determinados órganos (STOT) – exposición repetida	: No clasificado
Peligro por aspiración	: No clasificado

11.2. Información sobre otros peligros

11.2.1. Propiedades de alteración endocrina

Efectos adversos para la salud causados por las propiedades de alteración endocrina	: No aplicable
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11.2.2 Otros datos

Efectos adversos y posibles síntomas para la salud humana	: Enrojecimiento, dolor, Quemaduras, Provoca lesiones oculares graves.
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SECCIÓN 12: Información ecológica

12.1. Toxicidad

Ecología - general	: El producto no neutralizado puede ser peligroso para los organismos acuáticos.
Peligro a corto plazo (agudo) para el medio ambiente acuático	: No clasificado
Peligro a largo plazo (crónico) para el medio ambiente acuático	: No clasificado

Ácido L-(+)-láctico (79-33-4)

CL50 - Peces [1]	130 – 320 mg/l
CE50 - Crustáceos [1]	130 – 750 mg/l
CEr50 algas	3500 mg/l
NOEC crónico algas	1900 mg/l

12.2. Persistencia y degradabilidad

L-acido lactico

Persistencia y degradabilidad	Fácilmente biodegradable.
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Ácido L-(+)-láctico (79-33-4)

Persistencia y degradabilidad	Fácilmente biodegradable.
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12.3. Potencial de bioacumulación

L-acido lactico	
Coefficiente de partición n-octanol/agua (Log Pow)	-0,62

Ácido L-(+)-láctico (79-33-4)	
Coefficiente de partición n-octanol/agua (Log Pow)	-0,54 (método OCDE 107)

12.4. Movilidad en el suelo

No se dispone de más información

12.5. Resultados de la valoración PBT y mPmB

Componente	
Ácido L-(+)-láctico (79-33-4)	Esta sustancia/mezcla no cumple los criterios PBT del anexo XIII del Reglamento REACH Esta sustancia/mezcla no cumple los criterios mPmB del anexo XIII del Reglamento REACH

12.6. Propiedades de alteración endocrina

Efectos adversos en el medio ambiente causados por las propiedades de alteración endocrina : No aplicable

12.7. Otros efectos adversos

No se dispone de más información

SECCIÓN 13: Consideraciones relativas a la eliminación






13.1. Métodos para el tratamiento de residuos

Legislación regional (residuos)	: Destruir cumpliendo las condiciones de seguridad exigidas por la legislación local/nacional.
Métodos para el tratamiento de residuos	: Eliminar el contenido/recipiente de acuerdo con las instrucciones de reciclaje del recolector homologado.
Recomendaciones para la eliminación de las aguas residuales	: Eliminar de acuerdo con la normativa oficial.
Recomendaciones para la eliminación de productos/envases	: Los recipientes vacíos serán reciclados, reutilizados o eliminados respetando la normativa local.

SECCIÓN 14: Información relativa al transporte


En conformidad con ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
14.1. Número ONU o número ID				
ONU 3265	ONU 3265	ONU 3265	ONU 3265	ONU 3265
14.2. Designación oficial de transporte de las Naciones Unidas				
LÍQUIDO CORROSIVO, ÁCIDO, ORGÁNICO, N.E.P. (Acido lactico)	LÍQUIDO CORROSIVO, ÁCIDO, ORGÁNICO, N.E.P. (Acido lactico)	Corrosive liquid, acidic, organic, n.o.s. (Lactic acid)	LÍQUIDO CORROSIVO, ÁCIDO, ORGÁNICO, N.E.P. (Acido lactico)	LÍQUIDO CORROSIVO, ÁCIDO, ORGÁNICO, N.E.P. (Acido lactico)
14.3. Clase(s) de peligro para el transporte				
8	8	8	8	8

				
14.4. Grupo de embalaje				
III	III	III	III	III
14.5. Peligros para el medio ambiente				
Peligroso para el medio ambiente : No	Peligroso para el medio ambiente : No Contaminante marino : No	Peligroso para el medio ambiente : No	Peligroso para el medio ambiente : No	Peligroso para el medio ambiente : No
No se dispone de información adicional				

14.6. Precauciones particulares para los usuarios

Transporte por vía terrestre

Código de clasificación (ADR)	: C3
Disposiciones especiales (ADR)	: 274
Cantidades limitadas (ADR)	: 5I
Cantidades exceptuadas (ADR)	: E1
Instrucciones de embalaje (ADR)	: P001, IBC03, LP01, R001
Disposiciones para el embalaje en común (ADR)	: MP19
Instrucciones para cisternas portátiles y contenedores para granel (ADR)	: T7
Disposiciones especiales para cisternas portátiles y contenedores para granel (ADR)	: TP1, TP28
Código cisterna (ADR)	: L4BN
Vehículo para el transporte en cisternas	: AT
Categoría de transporte (ADR)	: 3
Disposiciones especiales de transporte - Bultos (ADR)	: V12
Número de identificación de peligro (código Kemler)	: 80
Panel naranja	: 

Código de restricciones en túneles (ADR) : E

Transporte marítimo

Disposiciones especiales (IMDG)	: 223, 274
Cantidades limitadas (IMDG)	: 5 L
Cantidades exceptuadas (IMDG)	: E1
Instrucciones de embalaje (IMDG)	: P001, LP01
Instrucciones de embalaje GRG (IMDG)	: IBC03
Instrucciones para cisternas (IMDG)	: T7
Disposiciones especiales para las cisternas (IMDG)	: TP1, TP28
N.º FS (Fuego)	: F-A
N.º FS (Derrame)	: S-B
Categoría de carga (IMDG)	: A
Estiba y Manipulación (IMDG)	: SW2
Segregación (IMDG)	: SGG1, SG36, SG49
Propiedades y observaciones (IMDG)	: Causes burns to skin, eyes and mucous membranes.

Transporte aéreo

Cantidades exceptuadas para aviones de pasajeros y de carga (IATA)	: E1
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Cantidades limitadas para aviones de pasajeros y de carga (IATA)	: Y841
Cantidad neta máxima para cantidad limitada en aviones de pasajeros y de carga (IATA)	: 1L
Instrucciones de embalaje para aviones de pasajeros y de carga (IATA)	: 852
Cantidad neta máxima para aviones de pasajeros y de carga (IATA)	: 5L
Instrucciones de embalaje exclusivamente para aviones de carga (IATA)	: 856
Cantidad máx. neta exclusivamente para aviones de carga (IATA)	: 60L
Disposiciones especiales (IATA)	: A3, A803
Código GRE (IATA)	: 8L

Transporte por vía fluvial

Código de clasificación (ADN)	: C3
Disposiciones especiales (ADN)	: 274
Cantidades limitadas (ADN)	: 5 L
Cantidades exceptuadas (ADN)	: E1
Transporte admitido (ADN)	: T
Equipo requerido (ADN)	: PP, EP
Número de conos/luces azules (ADN)	: 0

Transporte ferroviario

Código de clasificación (RID)	: C3
Disposiciones especiales (RID)	: 274
Cantidades limitadas (RID)	: 5L
Cantidades exceptuadas (RID)	: E1
Instrucciones de embalaje (RID)	: P001, IBC03, LP01, R001
Disposiciones particulares relativas al embalaje común (RID)	: MP19
Instrucciones para cisternas portátiles y contenedores para granel (RID)	: T7
Disposiciones especiales para cisternas portátiles y contenedores para granel (RID)	: TP1, TP28
Códigos de cisterna para las cisternas RID (RID)	: L4BN
Categoría de transporte (RID)	: 3
Disposiciones especiales de transporte - Bultos (RID)	: W12
Paquetes exprés (RID)	: CE8
N.º de identificación del peligro (RID)	: 80

14.7. Transporte marítimo a granel con arreglo a los instrumentos de la OMI

No aplicable

SECCIÓN 15: Información reglamentaria

15.1. Reglamentación y legislación en materia de seguridad, salud y medio ambiente específicas para la sustancia o la mezcla

15.1.1. Normativa de la UE

Las siguientes restricciones son aplicables de acuerdo con el anexo XVII del Reglamento (CE) n° 1907/2006 (REACH):

Código de referencia	Aplicable en	Título o descripción de la entrada

3(b)	L-acido lactico ; Ácido L-(+)-láctico	Sustancias o mezclas que reúnan los criterios de cualquiera de las siguientes clases o categorías de peligro establecidas en el anexo I del Reglamento (CE) n° 1272/2008: Clases de peligro 3.1 a 3.6, 3.7 efectos adversos sobre la función sexual y la fertilidad o sobre el desarrollo, 3.8 efectos distintos de los narcóticos, 3.9 y 3.10
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No contiene ninguna sustancia incluida en la lista de sustancias candidatas de REACH

No contiene ninguna sustancia que figure en la lista del Anexo XIV de REACH

No contiene ninguna sustancia sujeta al Reglamento (UE) n° 649/2012 del Parlamento Europeo y del Consejo, de 4 de julio de 2012, relativo a la exportación e importación de productos químicos peligrosos.

No contiene ninguna sustancia sujeta al Reglamento (UE) n° 2019/1021 del Parlamento Europeo y del Consejo, de 20 de junio de 2019, sobre contaminantes orgánicos persistentes

Información adicional, normativa sobre restricciones y prohibiciones : Los menores de 18 años no están autorizados a utilizar el producto.

15.1.2. Normativas nacionales

No incluido en el inventario de la TSCA (Toxic Substances Control Act) de los Estados Unidos

15.2. Evaluación de la seguridad química

Se ha llevado a cabo la Evaluación de la Seguridad Química

SECCIÓN 16: Otra información

Indicación de modificaciones:
Clasificación. Elementos de la etiqueta. Primeros auxilios. Controles de exposición/protección individual. Información toxicológica. Información ecológica. Información relativa al transporte.

Abreviaturas y acrónimos:	
ADN	Acuerdo europeo relativo al transporte internacional de mercancías peligrosas por vías navegables interiores
ADR	Acuerdo europeo relativo al transporte internacional de mercancías peligrosas por carretera
ATE	Estimación de la toxicidad aguda
FBC	Factor de bioconcentración
VLB (Valor Límite Biológico)	Valor límite biológico
DBO	Demanda bioquímica de oxígeno (DBO)
DQO	Demanda química de oxígeno (DQO)
DMEL	Nivel derivado con efecto mínimo
DNEL	Nivel sin efecto derivado
N° CE	número CE
CE50	Concentración efectiva media
ED	Propiedades de alteración endocrina
EN	Norma europea
CIIC	Centro Internacional de Investigaciones sobre el Cáncer
IATA	Asociación Internacional de Transporte Aéreo
IMDG	Código Marítimo Internacional de Mercancías Peligrosas

CL50	Concentración letal para el 50 % de una población de pruebas
LD50	Dosis letal para el 50 % de una población de pruebas (dosis letal media)
LOAEL	Nivel más bajo con efecto adverso observado
NOAEC	Concentración sin efecto adverso observado
NOAEL	Nivel sin efecto adverso observado
NOEC	Concentración sin efecto observado
OCDE	Organización para la Cooperación y el Desarrollo Económicos
VLA	Límite de exposición profesional
PBT	Sustancia persistente, bioacumulativa y tóxica
PNEC	Concentración prevista sin efecto
RID	Reglamento relativo al transporte internacional de mercancías peligrosas por ferrocarril
FDS	Fichas de Datos de Seguridad
STP	Estación depuradora
DTO	Necesidad teórica de oxígeno (BThO)
TLM	Tolerancia media limite
COV	Compuestos orgánicos volátiles
N° CAS	número CAS
N.E.P	No especificado en otra parte
mPmB	Muy persistente y muy bioacumulable
WGK	Clase de peligro para el agua

Consejos de formación : Garantizar que el personal obtenga información y capacitación sobre la naturaleza de la exposición y las medidas básicas para minimizarla.

Texto íntegro de las frases H y EUH:	
EUH071	Corrosivo para las vías respiratorias.
Eye Dam. 1	Lesiones oculares graves o irritación ocular, categoría 1
H314	Provoca quemaduras graves en la piel y lesiones oculares graves.
H318	Provoca lesiones oculares graves.
Skin Corr. 1C	Irritación o corrosión cutáneas, categoría 1, subcategoría 1C

Corbion SDS EU

Esta información se basa en nuestro conocimiento actual y tiene como finalidad describir el producto para la tutela de la salud, seguridad y medio ambiente. Por lo tanto, no debe ser interpretada como garantía de ninguna característica específica del producto.

EXPOSURE SCENARIO FOR COMMUNICATION

Substance Name: L-(+)-lactic acid

EC Number: 201-196-2

CAS Number: 79-33-4

Registration Number: 01-2119474164-39-0000 & 01-2119474164-39-0013

Date of Generation/Revision: 07/10/2021

Author: PURAC Biochem BV

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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: <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>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>Manual maintenance (cleaning and repair) of machinery</i>	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

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

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	• 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.

16. ES 16: Consumer use; Various products

16.1. Title section

ES name: *Consumer use (with service life)*

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), Washing and Cleaning Products (PC 35)

Environment	
1: <i>Widespread use leading to inclusion into/onto article (outdoor)</i>	ERC 8f
Consumer	
2: <i>Adhesives, Sealants</i>	PC 1
3: <i>Anti-Freeze and De-icing products</i>	PC 4
4: <i>Biocidal Products (e.g. Disinfectants, pest control)</i>	PC 8
5: <i>Fillers, Putties</i>	PC 9b
6: <i>Finger Paints</i>	PC 9c
7: <i>Non-metal-surface treatment products</i>	PC 15
8: <i>Products such as ph-regulators, flocculants, precipitants, neutralization agents, other unspecific</i>	PC 20
9: <i>Lubricants, Greases and Release Products</i>	PC 24
10: <i>Polishes and Wax Blends</i>	PC 31
11: <i>Washing and Cleaning Products (including solvent based products)</i>	PC 35
Subsequent service life exposure scenario(s)	
ES 21: Service life (consumers); Various articles	

16.2. Conditions of use affecting exposure

16.2.1. Control of consumer exposure: *Adhesives, Sealants (PC 1)*

Product (article) characteristics
Covers concentrations up to 100 %

16.2.2. Control of consumer exposure: *Anti-Freeze and De-icing products (PC 4)*

Product (article) characteristics
Covers concentrations up to 100 %

16.2.3. Control of consumer exposure: *Biocidal Products (e.g. Disinfectants, pest control) (PC 8)*

Product (article) characteristics
Covers concentrations up to 100 %

16.2.4. Control of consumer exposure: *Fillers, Putties (PC 9b)*

Product (article) characteristics
Covers concentrations up to 100 %

16.2.5. Control of consumer exposure: *Finger Paints (PC 9c)*



Product (article) characteristics
Covers concentrations up to 100 %

16.2.6. Control of consumer exposure: *Non-metal-surface treatment products (PC 15)*

Product (article) characteristics
Covers concentrations up to 100 %

16.2.7. Control of consumer exposure: *Products such as ph-regulators, flocculants, precipitants, neutralization agents, other unspecific (PC 20)*

Product (article) characteristics
Covers concentrations up to 100 %

16.2.8. Control of consumer exposure: *Lubricants, Greases and Release Products (PC 24)*

Product (article) characteristics
Covers concentrations up to 100 %

16.2.9. Control of consumer exposure: *Polishes and Wax Blends (PC 31)*

Product (article) characteristics
Covers concentrations up to 100 %

16.2.10. Control of consumer exposure: *Washing and Cleaning Products (including solvent based products) (PC 35)*

Product (article) characteristics
Covers concentrations up to 100 %

16.3. 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).

16.4. 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.

17. ES 17: Consumer use; Various products

17.1. Title section

ES name: *Consumer use (without service life)*

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), Washing and Cleaning Products (PC 35)

Environment	
1: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)	ERC 8d, ERC 8a
Consumer	
2: <i>Adhesives, Sealants</i>	PC 1
3: <i>Anti-Freeze and De-icing products</i>	PC 4
4: <i>Biocidal Products (e.g. Disinfectants, pest control)</i>	PC 8
5: <i>Fillers, Putties</i>	PC 9b
6: <i>Finger paints</i>	PC 9c
7: <i>Non-metal-surface treatment products</i>	PC 15
8: <i>Products such as ph-regulators, flocculants, precipitants, neutralization agents, other unspecific</i>	PC 20
9: <i>Lubricants, Greases and Release Products</i>	PC 24
10: <i>Polishes and Wax Blends</i>	PC 31
11: <i>Washing and Cleaning Products (including solvent based products)</i>	PC 35

17.2. Conditions of use affecting exposure

17.2.1. Control of consumer exposure: *Adhesives, Sealants (PC 1)*

Product (article) characteristics
Covers concentrations up to 100 %

17.2.2. Control of consumer exposure: *Anti-Freeze and De-icing products (PC 4)*

Product (article) characteristics
Covers concentrations up to 100 %

17.2.3. Control of consumer exposure: *Biocidal Products (e.g. Disinfectants, pest control) (PC 8)*

Product (article) characteristics
Covers concentrations up to 100 %

17.2.4. Control of consumer exposure: *Fillers, Putties (PC 9b)*

Product (article) characteristics
Covers concentrations up to 100 %

17.2.5. Control of consumer exposure: *Finger paints (PC 9c)*

Product (article) characteristics



Covers concentrations up to 100 %

17.2.6. Control of consumer exposure: *Non-metal-surface treatment products (PC 15)*

Product (article) characteristics
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Covers concentrations up to 100 %

17.2.7. Control of consumer exposure: *Products such as ph-regulators, flocculants, precipitants, neutralization agents, other unspecific (PC 20)*

Product (article) characteristics
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Covers concentrations up to 100 %

17.2.8. Control of consumer exposure: *Lubricants, Greases and Release Products (PC 24)*

Product (article) characteristics
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Covers concentrations up to 100 %

17.2.9. Control of consumer exposure: *Polishes and Wax Blends (PC 31)*

Product (article) characteristics
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Covers concentrations up to 100 %

17.2.10. Control of consumer exposure: *Washing and Cleaning Products (including solvent based products) (PC 35)*

Product (article) characteristics
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Covers concentrations up to 100 %

17.3. 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).

17.4. 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.

18. ES 18: Service life (worker at industrial site); Various articles

18.1. Title section

ES name: *Industrial processing of articles*

Article category: Other (AC 0), Vehicles (AC 1), Metal articles (AC 7), Rubber articles (AC 10), Wood articles (AC 11), Plastic articles (AC 13)

Environment	
1: Processing of articles at industrial sites with low release	ERC 12b, ERC 12a
Worker	
2: Low energy manipulation and handling of substances bound in/on materials and/or articles	PROC 21
3: <i>High (mechanical) energy work-up of substances bound in /on materials and/or articles</i>	PROC 24
4: <i>Manual maintenance (cleaning and repair) of machinery</i>	PROC 0
Exposure scenario of the uses leading to the inclusion of the substance into the article	
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)	
ES 11: Use at industrial sites; Other (PC 0); Building and construction work (SU 19)	
ES 15: Widespread use by professional workers; Various products; Various sectors	

18.2. Conditions of use affecting exposure

18.2.1. 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;

	<p>pictograms: yes)</p> <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

18.3. 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).

18.4. 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.

19. ES 19: Service life (worker at industrial site); Various articles (AC 0, AC 1, AC 7, AC 10, AC 11, AC 13)

19.1. Title section

ES name: *Industrial use of articles*

Article category: Other (AC 0), Vehicles (AC 1), Metal articles (AC 7), Rubber articles (AC 10), Wood articles (AC 11), Plastic articles (AC 13)

Environment	
1: <i>Use of articles at industrial sites with low release</i>	ERC 12c
Worker	
2: <i>Low energy manipulation and handling of substances bound in/on materials or articles</i>	PROC 21
3: <i>Manual maintenance (cleaning and repair) of machinery</i>	PROC 0
Exposure scenario of the uses leading to the inclusion of the substance into the article	
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)	
ES 15: Widespread use by professional workers; Various products; Various sectors	

19.2. Conditions of use affecting exposure

19.2.1. 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;

	<ul style="list-style-type: none"> ○ 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.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40 °C

19.3. 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).

19.4. 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.

20. ES 20: Service life (professional worker); Various articles (AC 4a, AC 4g)

20.1. Title section

ES name: *Use of articles/materials by professionals (high/low release)*

Article category: Stone, plaster, cement, glass and ceramic articles: Large surface area articles (AC 4a), Other articles made of stone, plaster, cement, glass or ceramic (AC 4g)

Environment	
1: <i>Use of articles by professionals</i>	ERC 10b, ERC 10a, ERC 11a, ERC 11b
Worker	
2: <i>Low energy manipulation and handling of substances bound in/on materials or articles</i>	PROC 21
3: <i>High (mechanical) energy work-up of substances bound in /on materials and/or articles</i>	PROC 24
Exposure scenario of the uses leading to the inclusion of the substance into the article	
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)	
ES 11: Use at industrial sites; Other (PC 0); Building and construction work (SU 19)	

20.2. Conditions of use affecting exposure

20.2.1. 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.

	<p>sampling): face shield</p> <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

20.3. 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).

20.4. 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.

21. ES 21: Service life (consumers); Various articles

21.1. Title section

ES name: *Use of articles by consumers (high release)*

Article category: Vehicles (AC 1), Machinery, mechanical appliances, electrical/electronic articles (AC 2), Stone, plaster, cement, glass and ceramic articles: Large surface area articles (AC 4a), Other articles made of stone, plaster, cement, glass or ceramic (AC 4g), Metal articles (AC 7), Rubber articles (AC 10), Wood articles (AC 11), Plastic articles (AC 13)

Environment	
1: Widespread use of articles with high or intended release (outdoor)	ERC 10b, ERC 10a, ERC 11a, ERC 11b
Consumer	
2: <i>Vehicles</i>	AC 1
3: <i>Machinery, mechanical appliances, electrical/electronic articles</i>	AC 2
4: <i>Stone, plaster, cement, glass and ceramic articles: Large surface area articles</i>	AC 4a
5: <i>Concrete containing lactic acid as additive</i>	AC 4g
6: <i>Metal articles</i>	AC 7
7: <i>Rubber articles</i>	AC 10
8: <i>Wood articles</i>	AC 11
9: <i>Plastic articles</i>	AC 13
Exposure scenario of the uses leading to the inclusion of the substance into the article	
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)	
ES 11: Use at industrial sites; Other (PC 0); Building and construction work (SU 19)	
ES 15: Widespread use by professional workers; Various products; Various sectors	
ES 16: Consumer use; Various products	

21.2. Conditions of use affecting exposure

21.2.1. Control of consumer exposure: *Vehicles (AC 1)*

Product (article) characteristics
Covers concentrations up to 100 %

21.2.2. Control of consumer exposure: *Machinery, mechanical appliances, electrical/electronic articles (AC 2)*

Product (article) characteristics
Covers concentrations up to 100 %

21.2.3. Control of consumer exposure: *Stone, plaster, cement, glass and ceramic articles: Large surface area articles (AC 4a)*

Product (article) characteristics
Covers concentrations up to 100 %

21.2.4. Control of consumer exposure: *Concrete containing lactic acid as additive (AC 4g)*



Product (article) characteristics
Covers concentrations up to 100 %

21.2.5. Control of consumer exposure: *Metal articles (AC 7)*

Product (article) characteristics
Covers concentrations up to 100 %

21.2.6. Control of consumer exposure: *Rubber articles (AC 10)*

Product (article) characteristics
Covers concentrations up to 100 %

21.2.7. Control of consumer exposure: *Wood articles (AC 11)*

Product (article) characteristics
Covers concentrations up to 100 %

21.2.8. Control of consumer exposure: *Plastic articles (AC 13)*

Product (article) characteristics
Covers concentrations up to 100 %

21.3. 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).

21.4. 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.