SECTION 1. IDENTIFICATION

Product identifier

Trade name : PURAC® Powder 60

Recommended use of the chemical and restrictions on use

Recommended use : Intended for food use
Speciality chemical

Manufacturer or supplier's details

Company name of supplier : Corbion
Address : Flint Street 8250
Lenexa KS 66214
USA
Telephone : +18006694092
Telefax : +19138884970
E-mail address of person responsible for the SDS : sds@corbion.com

Emergency telephone number

CHEMTREC: +1 703-741-5970 / 1-800-424-9300 CCN#18135

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Combustible dust

Skin irritation : Category 2

Serious eye damage : Category 1

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : May form combustible dust concentrations in air.
H315 Causes skin irritation.
H318 Causes serious eye damage.

Precautionary statements :

Prevention:

P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ eye protection/ face protection.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
L-(+)-lactic acid	79-33-4	>= 60 - < 80*
silica gel (Precipitated and gel)	112926-00-8	>= 1 - < 5*

*Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

General advice : Call a physician immediately.

If inhaled : If breathed in, move person into fresh air.

In case of skin contact : If on skin, rinse well with water.
Take off all contaminated clothing immediately.
If symptoms persist, call a physician.

In case of eye contact : Rinse immediately with plenty of water and seek medical advice.
If easy to do, remove contact lens, if worn.

If swallowed : Rinse mouth.
Do not induce vomiting. Drink water. Call physician immediately.

Most important symptoms and effects, both acute and delayed : Redness
Pain
Irritation
tearing
Gastrointestinal discomfort
Causes serious eye damage.
Causes skin irritation.

Notes to physician : Treat symptomatically.
In case of shortness of breath, give oxygen.
Symptoms of poisoning may not appear for several hours. Keep under medical supervision for at least 48 hours.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Water spray
Dry powder
Foam
Carbon dioxide (CO2)

Unsuitable extinguishing media : High volume water jet

Specific hazards during firefighting : none
Exposure to decomposition products may be a hazard to health.

Further information : Use a water spray to cool fully closed containers.
Prevent fire extinguishing water from contaminating surface water or the ground water system.

Special protective equipment for fire-fighters : Use personal protective equipment.
In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Refer to protective measures listed in sections 7 and 8.
Environmental precautions	:	Should not be released into the environment.
Methods and materials for containment and cleaning up	:	Collect as much of the spill as possible with a suitable absorbent material. Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water. To clean the floor and all objects contaminated by this material, use plenty of water.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling	:	Use only with adequate ventilation. Avoid inhalation, ingestion and contact with skin and eyes. Wear personal protective equipment. Do not breathe mist or vapours. Do not eat, drink or smoke when using this product. Wash skin thoroughly after handling. Wash contaminated clothing before reuse.
Conditions for safe storage	:	Keep containers tightly closed in a cool, well-ventilated place. Store locked up.
Further information on storage stability	:	Keep in a dry place. Stable under normal conditions.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
silica gel (Precipitated and gel)	112926-00-8	TWA	6 mg/m3	OSHA P0
		TWA (Dust)	20 Million particles per cubic foot (Silica)	OSHA Z-3
		TWA (Dust)	80 mg/m3 / %SiO2 (Silica)	OSHA Z-3
		TWA	6 mg/m3 (Silica)	NIOSH REL

Personal protective equipment

Respiratory protection	:	Suitable respiratory equipment: Equipment should conform to NIOSH Respirator Standard 42 CFR part 84
Filter type	:	Particulates type
Hand protection		
Material	:	Nitrile rubber
Rate of permeability	:	> 480 min
Glove thickness	:	0.5 mm
Directive	:	Equipment should conform to ANSI/ISEA 105
Eye protection	:	Safety goggles Wear a faceshield or other full face protection if there is a potential for direct

contact to the face with dusts, mists, or aerosols.
Equipment should conform to ANSI/ISEA Z87.1

Skin and body protection	:	Long sleeved clothing Boots Chemical resistant apron
Protective measures	:	Wear suitable protective equipment.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	powder
Colour	:	white, light yellow
Odour	:	characteristic
Odour Threshold	:	No data available
pH	:	3 - 4 (77 °F / 25 °C) Concentration: 100 g/l (as aqueous solution)
Melting point/range	:	306 - 313 °F / 152 - 156 °C
Boiling point/boiling range	:	No data available
Flash point	:	Not applicable
Flammability (solid, gas)	:	No data available
Self-ignition	:	> 986 °F / > 530 °C
Upper explosion limit / Upper flammability limit	:	Not applicable
Lower explosion limit / Lower flammability limit	:	Not applicable
Vapour pressure	:	No data available
Relative vapour density	:	Not applicable
Relative density	:	No data available
Density	:	400 kg/m3
Bulk density	:	400 kg/m3
Solubility(ies)		
Water solubility	:	140 g/l (77 °F / 25 °C)
Partition coefficient: n-octanol/water	:	No data available
Decomposition temperature	:	> 392 °F / > 200 °C
Viscosity		
Viscosity, dynamic	:	Not applicable
Viscosity, kinematic	:	Not applicable
Oxidizing properties	:	Not applicable
Particle size	:	No data available

Particle Size Distribution	:	No data available
Specific surface area	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Conditions to avoid	:	Extremes of temperature and direct sunlight. Direct heating, dirt, chemical contamination, sunlight, UV or ionising radiation.
Incompatible materials	:	Oxidizing agents Bases Acids Metals
Hazardous decomposition products	:	toxic fumes Carbon dioxide (CO2) Carbon monoxide

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity	:	Acute toxicity estimate: 3,100 mg/kg Method: Calculation method
Acute inhalation toxicity	:	Acute toxicity estimate: 8.71 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method
Acute dermal toxicity	:	Acute toxicity estimate: 2,541 mg/kg Method: Calculation method

Components:

L-(+)-lactic acid:

Acute oral toxicity	:	LD50 Oral (Rat): 3,543 mg/kg Method: US EPA Test Guideline OPP 81-1
Acute inhalation toxicity	:	LC50 (Rat): > 7.94 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403
Acute dermal toxicity	:	LD50 Dermal (Rabbit): > 2,000 mg/kg

silica gel (Precipitated and gel):

Acute oral toxicity	:	LD50 Oral (Rat): > 5,000 mg/kg
Acute inhalation toxicity	:	Remarks: Not classified due to data which are conclusive although insufficient for classification.
Acute dermal toxicity	:	Remarks: Not classified due to data which are conclusive although insufficient for classification.

Skin corrosion/irritation

Causes skin irritation.

Product:

Method	:	OECD Test Guideline 404
Result	:	Not corrosive
Result	:	Skin irritation
Remarks	:	Expert judgement

Components:

L-(+)-lactic acid:

Result	:	Corrosive after 1 to 4 hours of exposure

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Assessment	:	Risk of serious damage to eyes.
Remarks	:	Expert judgement

Components:

L-(+)-lactic acid:

Assessment	:	Risk of serious damage to eyes.

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Ecotoxicology Assessment

Acute aquatic toxicity	:	No data available
Chronic aquatic toxicity	:	No data available

Components:

L-(+)-lactic acid:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 130 mg/l Exposure time: 96 h Method: EPA-660/3-75-009
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 130 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EC50 (Raphidocelis subcapitata (freshwater green alga)): > 3,500 mg/l Exposure time: 72 h Method: OECD Test Guideline 201

silica gel (Precipitated and gel):

Toxicity to fish	:	LC50: > 5,000 mg/l Exposure time: 96 h Method: OECD Test Guideline 203 Remarks: Not classified
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 5,000 mg/l Exposure time: 48 h Method: OECD Test Guideline 202

Persistence and degradability

Components:

L-(+)-lactic acid:

Biodegradability	:	Result: Readily biodegradable.

silica gel (Precipitated and gel):

Biodegradability	:	Remarks: Not applicable

Bioaccumulative potential

Components:

L-(+)-lactic acid:

Partition coefficient: n-octanol/water	:	log Pow: -0.54 Method: OECD Test Guideline 107

Mobility in soil

No data available

Other adverse effects

Product:

Ozone-Depletion Potential	:	Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	Dispose of as hazardous waste in compliance with local and national regulations.
Contaminated packaging	:	Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14. TRANSPORT INFORMATION

National Regulations

49 CFR
Not regulated as a dangerous good

International Regulations

UNRTDG
Not regulated as a dangerous good

IATA-DGR
Not regulated as a dangerous good

IMDG-Code
Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Special precautions for user

Not applicable

SECTION 15. REGULATORY INFORMATION

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Combustible dust
Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).
This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.
This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.
This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307
This product does not contain any priority pollutants related to the U.S. Clean Water Act

US State Regulations

Massachusetts Right To Know

silica gel (Precipitated and gel)	112926-00-8

Maine Chemicals of High Concern

Product does not contain any listed chemicals

Vermont Chemicals of High Concern

Product does not contain any listed chemicals

Washington Chemicals of High Concern

Product does not contain any listed chemicals

California Permissible Exposure Limits for Chemical Contaminants

silica gel (Precipitated and gel)	112926-00-8

The components of this product are reported in the following inventories:

TSCA : All substances listed as active on the TSCA inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

Full text of other abbreviations

NIOSH REL	:	USA. NIOSH Recommended Exposure Limits
OSHA P0	:	USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-3	:	USA. Occupational Exposure Limits (OSHA) - Table Z-3 Mineral Dusts
NIOSH REL / TWA	:	Time-weighted average concentration for up to a 10-hour workday during a 40-hour

		workweek
OSHA P0 / TWA	:	8-hour time weighted average
OSHA Z-3 / TWA	:	8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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Date format	:	dd.mm.yyyy Separators: Comma is applied as a thousand separator; Dot is used as a decimal separator; Example 1,234,567.89

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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