
SECTION 1 - PRODUCT & COMPANY IDENTIFICATION

Redshift Technologies, Inc. 34 East 29th Street New York, NY 10016	Emergency telephone number (Chemtrec):	(800) 424-9300
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Product name	Starch
Synonyms	Corn starch
Chemical family	Polysaccharide
Description	White powder; Fine; Varying odor; Distinct taste
Chemical name	Starch
CAS number	9005-25-8
RTECS number	GM5090000
EINECS number	232-679-6

SECTION 2 - COMPOSITION

<u>Ingredient</u>	<u>CAS Number</u>	<u>Amount</u>
Starch NF*	9005-25-8	100%

*Hazardous

Note: Ingredient(s) indicated as hazardous have been assessed under US OSHA Hazard Communication Standard for workplace safety (29 CFR 1910.1200).

SECTION 3 - HAZARDS IDENTIFICATION

Signal word	WARNING!
Statements of hazard	CAN CAUSE EYE, SKIN, AND RESPIRATORY TRACT IRRITATION.
Eye effects	May cause eye irritation.
Skin effects	May cause skin irritation.
Inhalation effects	Can cause nose, throat and lung irritation.
Ingestion effects	Ingestion of large quantities may cause partial intestinal obstruction, iron deficiency anemia, reduced cholesterol, and possibly hypertrophy of the parotid glands.
Route of entry	Inhalation, skin contact, or ingestion.

SECTION 4 - FIRST AID MEASURES

Eyes	Immediately flush eyes with water for at least 15 minutes. If irritation occurs or persists, get medical attention.
Skin	Wash skin with soap and water. Remove contaminated clothing and shoes. Wash clothing and thoroughly clean shoes before reuse. If irritation occurs or persists, get medical attention.
Inhalation over time	Remove to fresh air. If not breathing, give artificial respiration. Get medical attention immediately.
Ingestion	If swallowed, get medical attention. Do not induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious person.

SECTION 5 - FIRE FIGHTING MEASURES

General hazard	Dust/air mixture may explode if ignited. Toxic gases may be emitted in fires of this substance. See Hazardous combustion products, below.
Fire fighting instructions	Wear approved positive pressure, self-contained breathing apparatus and full protective turn out gear. Evacuate area and fight fire from a safe distance. Apply water spray or mist to knock down dust.
Extinguishing media	Use carbon dioxide, dry chemical, or water spray.
Hazardous combustion products	Emits toxic fumes of carbon monoxide and carbon dioxide.
Flash point	No data available
Autoignition	> 380°C (> 716°F) (dust cloud)
PPE for fire fighting	Self-contained breathing apparatus and full protective equipment are recommended for firefighters.
Minimum explosive concentration for dust/vapor	No data available
Flammability limits	Lower 0.04g/L

SECTION 6 - ACCIDENTAL RELEASE MEASURES

General	Review Sections 3, 8 and 12 before proceeding with clean up. Eliminate possible ignition sources (e.g., heat, sparks, flame, impact, friction, electricity), and follow appropriate grounding procedures. Avoid inhalation and direct contact. Wear appropriate personal protective equipment during all clean-up activities.
Small spill	Contain the source of the spill or leak if it is safe to do so. Vacuum or sweep substance into appropriate recovery container. Clean spill area thoroughly. Prevent discharge to drains.

SECTION 6 - ACCIDENTAL RELEASE MEASURES ...continued

Large spill Scoop or shovel spilled material into a labeled container for disposal. Close container and move it to a secure holding area. Clean spill area thoroughly. Collect wash water with a non-combustible absorbant material and transfer to labeled container for treatment and disposal. Use appropriate containment to avoid environmental contamination. Prevent entry into drains, sewers, and waterways.

SECTION 7 - HANDLING AND STORAGE

General handling Eliminate possible ignition sources (e.g., heat, sparks, flame, impact, friction, electricity), and follow appropriate grounding and bonding procedures. Minimize dust generation and accumulation. Use only in a well-ventilated area. Avoid contact with eyes. Avoid breathing dust.

Storage conditions Store out of direct sunlight in a well ventilated area at room temperature. Keep container tightly closed when not in use.

Temperature range for storage 15 - 25°C

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limits

<u>Compound</u>	<u>Issuer</u>	<u>Type</u>	<u>OEL</u>
Starch NF	OSHA	TWA-8 HR	5 mg/m ³ (respirable fraction)
	OSHA	TWA-8 HR	15 mg/m ³ (total dust)
	ACGIH	TWA-8 HR	10 mg/m ³

Analytical method Particulate filter; Gravimetric; NIOSH III #0500, nuisance dust (total), #0600 (respirable)

Ventilation Use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. For laboratory use, handle in a lab fume hood.

Eye protection Wear safety glasses or goggles. An eye wash station should be available.

Skin protection Use protective clothing (uniforms, lab coats, disposable coveralls, etc.) in both production and laboratory areas.

Hand protection Protective gloves are not required, but recommended.

Respiratory protection If the applicable Occupational Exposure Limit (OEL) is exceeded, wear an appropriate respirator with a protection factor sufficient to control exposures to below the OEL.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical form	Fine powder
Color	White
Odor	Varying odor
Taste	Distinct taste
Molecular weight	No data available
Molecular formula	(C ₆ H ₁₀ O ₅) _x
pH	5.0 - 7.0 (2% solution)
Boiling point	No data available
Melting point	No data available
Density	1.5
Specific gravity	1.45
Vapor pressure	Not applicable
Water solubility	Soluble @ 100°C
Solvent solubility	No data available

SECTION 10 - STABILITY AND REACTIVITY

Stability	Stable
Conditions to avoid	Avoid dust generation and high temperatures and sources of ignition.
Reactivity	No data available
Incompatibilities	Oxidizers
Hazardous decomposition products	This substance will decompose upon melting. See Section 5 - under Hazardous combustion products.
Hazardous polymerization	Will not occur
Oxidizing properties	Not applicable (N/A)
Explosive properties	Dust/air mixtures may explode if ignited.
Explosive limits	No data available

SECTION 11 - TOXICOLOGY INFORMATION

Acute toxicity				
<u>Compound</u>	<u>Type</u>	<u>Route</u>	<u>Species</u>	<u>Dosage</u>
Starch NF	LD ₅₀	IP	Mouse	6,600 mg/kg

SECTION 11 - TOXICOLOGY INFORMATION ...continued

Eye	No data available, see Section 3 - HAZARDS IDENTIFICATION, above.
Skin	No data available, see Section 3 - HAZARDS IDENTIFICATION, above.
Inhalation	No data available, see Section 3 - HAZARDS IDENTIFICATION, above.
Ingestion	The acute intraperitoneal (IP) LD ₅₀ for starch is reported to be 6,600 mg/kg in mice.
Mutagenicity	No data available
Subchronic effects	No data available
Chronic toxicity	See Chronic effects/Carcinogenicity below.
Chronic effects/ carcinogenicity	No long-term toxicity studies have been conducted to evaluate the chronic toxicity or carcinogenic potential of this substance in the laboratory animals.
OSHA carcinogen	No
NTP carcinogen	No
IARC carcinogen	No
Reproductive effects	No data available
Teratogenicity	No data available
At increased risk from exposure	Individuals with respiratory system conditions may be more susceptible to toxicity in cases of overexposure.

SECTION 12 - ECOLOGICAL INFORMATION

Environmental overview The use and/or disposal of this substance, its metabolites and degradation products is not expected to cause adverse effects upon animals, plants, humans, other organisms, or the environment.

Aquatic toxicity

<u>Compound</u>	<u>Type</u>	<u>Species</u>	<u>Dosage</u>
Starch NF	LC ₅₀ /96h	Silver perch	5,000 mg/L
	EC ₅₀ /96h	Virginia oyster	3,000 mg/L

SECTION 13 - DISPOSAL INFORMATION

Disposal procedure Incineration is the recommended method of disposal for this material. Treatment, storage, transportation and disposal must be in accordance with applicable Federal, State, and Local regulations.

SECTION 14 - TRANSPORTATION INFORMATION

General shipping instructions Not regulated
IATA name Not regulated

SECTION 15 - REGULATORY INFORMATION

EU classification Not classified
EU labelling Not classified
TSCA status Yes
SARA section 302 No
SARA section 313 Yes
California proposition 65 No

SECTION 16 - OTHER

Sources of data The data contained in this MSDS may have been gathered from confidential internal sources, raw material suppliers, or from the published literature.

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