

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2012 and GHS Rev 03.

Issue date 12/15/2021

Reviewed on 12/15/2021

1 Identification

- **Product Identifier**
- **Trade Name:** TurfRx Supreme
- **Relevant identified uses of the substance or mixture and uses advised against:**
- **Product Description:** Fertilizer
- **Details of the Supplier of the Safety Data Sheet:**
- **Manufacturer/Supplier:**
Redox Chemicals LLC
130 South 100 West
PO Box 129
Burley, ID 83318
Phone: 208-678-2610
Fax: 208-677-3609
- **Emergency telephone number:** 208-431-2314

2 Hazard(s) Identification

- **Classification of the substance or mixture:**



Corrosion

Skin Corr. 1A H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.

Aquatic Acute 2 H401 Toxic to aquatic life.

- **Label elements:**
- **Hazard pictograms:**



- **Signal word:** Danger

- **Hazard-determining components of labeling:**

Potassium Oxide
Phosphorus Pentoxide
Zinc sulfate monohydrate

- **Hazard statements:**

H314 Causes severe skin burns and eye damage.
H401 Toxic to aquatic life.

- **Precautionary statements:**

P260 Do not breathe dusts or mists.
P264 Wash thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a poison center/doctor.

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- P321 Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).
P363 Wash contaminated clothing before reuse.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Unknown acute toxicity:

This value refers to knowledge of known, established toxicological or ecotoxicological values.

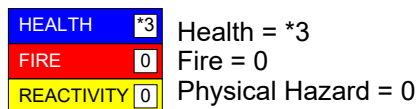
32.1 % of the mixture consists of component(s) of unknown toxicity.

Classification system: NFPA/HMIS Definitions: 0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme

NFPA ratings (scale 0 - 4)



HMIS-ratings (scale 0 - 4)



Hazard(s) not otherwise classified (HNOC): None known

3 Composition/Information on Ingredients

Chemical characterization: Substance

Description: Mixture of substances listed below with non-hazardous additions.

Dangerous Components:

CAS: 12136-45-7	Potassium Oxide ⚠ Water-react. 3, H261; ⚠ Skin Corr. 1A, H314; Eye Dam. 1, H318	15-35%
CAS: 1314-56-3 RTECS: TH 3945000	Phosphorus Pentoxide ⚠ Skin Corr. 1A, H314	10-15%
CAS: 7439-89-6 RTECS: NO 4565500	Iron ⚠ Flam. Sol. 2, H228; ⚠ Skin Irrit. 2, H315; STOT SE 3, H335; Eye Irrit. 2B, H320; Combustible Dust	2-12%
CAS: 7446-19-7 RTECS: ZH 5300000	Zinc sulfate monohydrate ⚠ Eye Dam. 1, H318; ⚠ Aquatic Acute 1, H400; ⚠ Acute Tox. 4, H302	2-12%
CAS: 7439-96-5 RTECS: OO 9275000	Manganese ⚠ Pyr. Sol. 1, H250; Water-react. 1, H260	2-12%
CAS: 7727-37-9 RTECS: QW 9700000	Nitrogen ⚠ Press. Gas, H280; Simple Asphyxiant	≤2.5%
CAS: 7440-50-8 RTECS: GL 5325000	Copper	≤2.5%

Additional information:

The exact percentages of the ingredients of this mixture are considered to be proprietary and are withheld in accordance with the provisions of paragraph (i) of §1910.1200 of 29 CFR 1910.1200 Trade Secrets.

* 4 First-Aid Measures

Description of first aid measures

General information: Immediately remove any clothing soiled by the product.

After inhalation: In case of unconsciousness place patient stably in the side position for transportation.

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· **After skin contact:**

Remove contaminated clothing and wash before reuse.
Immediate medical treatment is necessary. Failure to treat burns can prevent wounds from healing.
Immediately wash skin with soap and plenty of water for at least 20 minutes.
Seek medical treatment.

· **After eye contact:**

Rinse opened eye for at least 15 minutes under running water.
Get immediate medical attention.
If easy to do so, remove contact lenses if worn.

· **After swallowing:** Drink copious amounts of water and provide fresh air. Immediately call a doctor.

· **Information for doctor**

· **Most important symptoms and effects, both acute and delayed:** No further relevant information available.

· **Indication of any immediate medical attention and special treatment needed:**

No further relevant information available.

* 5 Fire-Fighting Measures

· **Extinguishing media**

· **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.

· **For safety reasons unsuitable extinguishing agents:** No further relevant information.

· **Special hazards arising from the substance or mixture:** No further relevant information available.

· **Advice for firefighters**

· **Special protective equipment for firefighters:**

As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear to prevent contact with skin and eyes.

* 6 Accidental Release Measures

· **Personal precautions, protective equipment and emergency procedures:**

Wear protective equipment. Keep unprotected persons away.

· **Environmental precautions:**

Inform respective authorities in case of seepage into water course or sewage system.
Dilute with plenty of water.

· **Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (i.e. sand, diatomite, acid binders, universal binders, sawdust).
Use neutralizing agent.
Dispose of contaminated material as waste according to section 13.
Ensure adequate ventilation.
Dispose of the collected material according to regulations.

· **Reference to other sections:**

See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

· **PAC-1:**

12136-45-7	Potassium Oxide	0.18 mg/m ³
1314-56-3	Phosphorus Pentoxide	1 mg/m ³
7439-89-6	Iron	3.2 mg/m ³
7439-96-5	Manganese	3 mg/m ³
7727-37-9	Nitrogen	7.96E+05 ppm
7440-50-8	Copper	3 mg/m ³
7440-42-8	Boron	1.9 mg/m ³

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7439-98-7	molybdenum	30 mg/m ³
· PAC-2:		
12136-45-7	Potassium Oxide	2 mg/m ³
1314-56-3	Phosphorus Pentoxide	10 mg/m ³
7439-89-6	Iron	35 mg/m ³
7439-96-5	Manganese	5 mg/m ³
7727-37-9	Nitrogen	8.32E+05 ppm
7440-50-8	Copper	33 mg/m ³
7440-42-8	Boron	21 mg/m ³
7439-98-7	molybdenum	330 mg/m ³
· PAC-3:		
12136-45-7	Potassium Oxide	54 mg/m ³
1314-56-3	Phosphorus Pentoxide	50 mg/m ³
7439-89-6	Iron	150 mg/m ³
7439-96-5	Manganese	1,800 mg/m ³
7727-37-9	Nitrogen	8.69E+05 ppm
7440-50-8	Copper	200 mg/m ³
7440-42-8	Boron	130 mg/m ³
7439-98-7	molybdenum	2,000 mg/m ³

* 7 Handling and Storage

- **Handling**
- **Precautions for safe handling:** No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:** Store in the original container.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s):** No further relevant information available.

* 8 Exposure Controls/Personal Protection

- **Additional information about design of technical systems:** No further data; see section 7.
- **Control parameters:**
- **Components with occupational exposure limits:**
The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.
At this time, the other constituents have no known exposure limits.

7727-37-9 Nitrogen	
TLV	see App. F Minimal oxygen content (D)
7440-50-8 Copper	
PEL	Long-term value: 1* 0.1** mg/m ³ as Cu *dusts and mists **fume

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REL	Long-term value: 1* 0.1** mg/m ³ as Cu *dusts and mists **fume
TLV	Long-term value: 1* 0.2** mg/m ³ *dusts and mists; **fume; as Cu

· **Additional information:** The lists that were valid during the creation of this SDS were used as basis.

· **Exposure controls:**

· **Personal protective equipment**

· **General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing and wash before reuse.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

· **Breathing equipment:** Not required.

· **Protection of hands:**



Protective gloves

· **Material of gloves:**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material:**

The exact break-through time has to be determined and observed by the manufacturer of the protective gloves.

· **Eye protection:**



Tightly sealed goggles

· **Limitation and supervision of exposure into the environment:**

Keep away from drains, surface and ground waters.

Avoid release into the environment.

* 9 Physical and Chemical Properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form:

Liquid

Color:

Brown

· **Odor:**

Characteristic

· **Odor threshold:**

Not determined.

· **pH-value @ 20 °C (68 °F):**

3-4

· **Change in condition**

Melting point/Melting range:

Not determined.

· **Flash point:**

None

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- **Flammability (solid, gaseous):** Not applicable.
- **Ignition temperature:** Not applicable
- **Decomposition temperature:** Not determined.
- **Auto igniting:** Product is not self-igniting.
- **Danger of explosion:** Product does not present an explosion hazard.
- **Explosion limits:**
 - Lower:** Not determined.
 - Upper:** Not determined.
- **Vapor pressure:** Not determined.
- **Density:** Not determined.
- **Relative density:** Not determined.
- **Vapor density:** Not determined.
- **Evaporation rate:** Not determined.
- **Solubility in / Miscibility with:**
 - Water:** Fully miscible.
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
 - Dynamic:** Not determined.
 - Kinematic:** Not determined.
- **Solvent content:**
 - VOC content:** 0.00 %
- **Other information:** No further relevant information available.

10 Stability and Reactivity

- **Reactivity:** No further relevant information available.
- **Chemical stability:** Stable under normal conditions.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions:** No dangerous reactions known.
- **Conditions to avoid:** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological Information

- **Information on toxicological effects:**
- **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

7439-89-6 Iron

Oral LD50 7,500 mg/kg (Rat)

7446-19-7 Zinc sulfate monohydrate

Oral LD50 2,150 mg/kg (Rat)

7439-96-5 Manganese

Oral LD50 9,000 mg/kg (Rat)

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· **Primary irritant effect:**

· **On the skin:** Strong caustic effect on skin and mucous membranes.

· **On the eye:**

Strong irritant with the danger of severe eye injury.

Corrosive effect.

Causes serious eye irritation.

· **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Corrosive

Irritant

Swallowing will lead to a corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

Symptoms of systemic copper poisoning may include: capillary damage, headache, cold sweat, weak pulse, and kidney and liver damage, central nervous system excitation followed by depression, jaundice, convulsions, paralysis, and coma. Death may occur from shock or renal failure. Chronic copper poisoning is typified by hepatic cirrhosis, brain damage and demyelination, kidney defects, and copper deposition in the cornea as exemplified by humans with Wilson's disease. It has also been reported that copper poisoning has lead to hemolytic anemia and accelerates arteriosclerosis.

· **Carcinogenic categories:**

· **IARC (International Agency for Research on Cancer):**

None of the ingredients are listed.

· **NTP (National Toxicology Program):**

None of the ingredients are listed.

· **OSHA-Ca (Occupational Safety & Health Administration):**

None of the ingredients are listed.

12 Ecological Information

· **Toxicity:**

· **Aquatic toxicity:**

Avoid release into the environment. Runoff from fire control or dilution water may cause pollution.

7439-96-5 Manganese

EC50 40 mg/l (Water flea)

7440-50-8 Copper

EC50 0.04-0.05 mg/l (Water flea)

· **Persistence and degradability:** No further relevant information available.

· **Behavior in environmental systems:**

· **Bioaccumulative potential:** No further relevant information available.

· **Mobility in soil:** No further relevant information available.

· **Ecotoxicological effects:**

· **Remark:** Toxic for fish

· **Additional ecological information:**

· **General notes:**

Do not allow undiluted product or product that has not been neutralized to reach ground water, water course or sewage system.

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

Poisonous for fish and plankton in water bodies.

Toxic for aquatic organisms

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- **Results of PBT and vPvB assessment:**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects:** No further relevant information available.

13 Disposal Considerations

- **Waste treatment methods**
- **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system. Observe all federal, state and local environmental regulations when disposing of this material.
- **Uncleaned packaging**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

* 14 Transport Information

- **UN-Number:**
- **DOT, ADR/ADN, IMDG, IATA**
- **UN proper shipping name:**
- **DOT**
- **ADR/ADN**
- **IMDG**
- **IATA**
- **Transport hazard class(es):**
- **DOT**



- **Class:**
- **Label:**

· **ADR/ADN**



- **Class:**
- **Label:**

· **IMDG**



- **Class:**

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· **Label:** 8

· **IATA**



· **Class:** 8 Corrosive substances
 · **Label:** 8
 · **Packing group:** II
 · **DOT, ADR/ADN, IMDG, IATA**
 · **Environmental hazards:** Product contains environmentally hazardous substances:
 Zinc sulfate monohydrate
 Symbol (fish and tree)
 Warning: Corrosive substances
 · **Special marking (ADR/ADN):**
 · **Special precautions for user:**
 · **Hazard identification number (Kemler code):** 80
 · **EMS Number:** F-A,S-B
 · **Segregation groups:** Alkalies, acids
 · **Stowage Category** A
 · **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:** Not applicable.
 · **Transport/Additional information:**
 · **DOT**
 · **Quantity limitations:** On passenger aircraft/rail: 15 kg
 On cargo aircraft only: 50 kg

· **ADR/ADN**
 · **Excepted quantities (EQ):** Code: E2
 Maximum net quantity per inner packaging: 30 ml
 Maximum net quantity per outer packaging: 500 ml

· **IMDG**
 · **Limited quantities (LQ):** 1 kg
 · **Excepted quantities (EQ):** Code: E2
 Maximum net quantity per inner packaging: 30 ml
 Maximum net quantity per outer packaging: 500 ml
 · **UN "Model Regulation":** UN 1759 CORROSIVE SOLID, N.O.S. (POTASSIUM MONOXIDE, PHOSPHORUS PENTOXIDE), 8, II, ENVIRONMENTALLY HAZARDOUS

* 15 Regulatory Information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture:**
 No further relevant information available.

· **SARA (Superfund Amendments and Reauthorization):**

· **Section 355 (extremely hazardous substances):**

1314-56-3	Phosphorus Pentoxide
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· **Section 313 (Specific toxic chemical listings):**

7446-19-7	Zinc sulfate monohydrate
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7439-96-5	Manganese
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7440-50-8	Copper
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· TSCA (Toxic Substances Control Act):		
12136-45-7	Potassium Oxide	ACTIVE
1314-56-3	Phosphorus Pentoxide	ACTIVE
7439-89-6	Iron	ACTIVE
7439-96-5	Manganese	ACTIVE
7727-37-9	Nitrogen	ACTIVE
7440-50-8	Copper	ACTIVE
7440-42-8	Boron	ACTIVE
7439-98-7	molybdenum	ACTIVE
· Hazardous Air Pollutants		
7439-96-5	Manganese	
· California Proposition 65:		
· Chemicals known to cause cancer:		
None of the ingredients are listed.		
· Chemicals known to cause reproductive toxicity for females:		
None of the ingredients are listed.		
· Chemicals known to cause reproductive toxicity for males:		
None of the ingredients are listed.		
· Chemicals known to cause developmental toxicity:		
None of the ingredients are listed.		
· New Jersey Right-to-Know List:		
12136-45-7	Potassium Oxide	
1314-56-3	Phosphorus Pentoxide	
7439-96-5	Manganese	
7727-37-9	Nitrogen	
7440-50-8	Copper	
7440-42-8	Boron	
7439-98-7	molybdenum	
· New Jersey Special Hazardous Substance List:		
12136-45-7	Potassium Oxide	CO, R2
1314-56-3	Phosphorus Pentoxide	CO, R2
7439-96-5	Manganese	F3, R1
· Pennsylvania Right-to-Know List:		
1314-56-3	Phosphorus Pentoxide	
7439-96-5	Manganese	
7727-37-9	Nitrogen	
7440-50-8	Copper	
7439-98-7	molybdenum	
· Pennsylvania Special Hazardous Substance List:		
1314-56-3	Phosphorus Pentoxide	E
7439-96-5	Manganese	E

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7440-50-8	Copper	E
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· **Carcinogenic categories:**

· **EPA (Environmental Protection Agency):**

7446-19-7	Zinc sulfate monohydrate	D, I, II
7439-96-5	Manganese	D
7440-50-8	Copper	D
7440-42-8	Boron	I (oral)

· **TLV (Threshold Limit Value established by ACGIH):**

7439-98-7	molybdenum	A3
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· **NIOSH-Ca (National Institute for Occupational Safety and Health):**

None of the ingredients are listed.

· **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms:**



· **Signal word:** Danger

· **Hazard-determining components of labeling:**

Potassium Oxide
Phosphorus Pentoxide
Zinc sulfate monohydrate

· **Hazard statements:**

H314 Causes severe skin burns and eye damage.
H401 Toxic to aquatic life.

· **Precautionary statements:**

P260 Do not breathe dusts or mists.
P264 Wash thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a poison center/doctor.
P321 Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).
P363 Wash contaminated clothing before reuse.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **National regulations:**

The product is not subject to be labelled according with the prevailing version of the regulations on hazardous substances.

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- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other Information

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied, and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

- **Contact:**
- **Date of last revision/ revision number:** 12/15/2021 / 4
- **Abbreviations and acronyms:**

ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road
 ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
 IMDG: International Maritime Code for Dangerous Goods
 DOT: US Department of Transportation
 IATA: International Air Transport Association
 EINECS: European Inventory of Existing Commercial Chemical Substances
 ELINCS: European List of Notified Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 NFPA: National Fire Protection Association (USA)
 HMIS: Hazardous Materials Identification System (USA)
 VOC: Volatile Organic Compounds (USA, EU)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bioaccumulative and Toxic
 vPvB: very Persistent and very Bioaccumulative
 NIOSH: National Institute for Occupational Safety and Health
 OSHA: Occupational Safety & Health Administration
 TLV: Threshold Limit Value
 PEL: Permissible Exposure Limit
 REL: Recommended Exposure Limit
 Press. Gas: Gases under pressure – Dissolved gas
 Flam. Sol. 2: Flammable solids – Category 2
 Pyr. Sol. 1: Pyrophoric solids – Category 1
 Water-react. 1: Substances and mixtures which in contact with water emit flammable gases – Category 1
 Water-react. 3: Substances and mixtures which in contact with water emit flammable gases – Category 3
 Acute Tox. 4: Acute toxicity – Category 4
 Skin Corr. 1A: Skin corrosion/irritation – Category 1A
 Skin Irrit. 2: Skin corrosion/irritation – Category 2
 Eye Dam. 1: Serious eye damage/eye irritation – Category 1
 Eye Irrit. 2B: Serious eye damage/eye irritation – Category 2B
 STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
 Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
 Aquatic Acute 2: Hazardous to the aquatic environment - acute aquatic hazard – Category 2

- *** Data compared to the previous version altered.**

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