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1. Identification

Product identifier used on the label

tert-Butyl Acrylate (TBA)

Recommended use of the chemical and restriction on use

Recommended use*: Monomer. Recommended use*: Monomer.

Unsuitable for use: Not intended for sale to or use by the general public.

Details of the supplier of the safety data sheet

Company:

BASE CORPORATION 100 Park Avenue Florham Park, NJ 07932, USA

Telephone: +1 973 245-6000

Emergency telephone number

24 Hour Emergency Response Information

CHEMTREC: 1-800-424-9300

BASF HOTLINE: 1-800-832-HELP (4357)

Other means of identification

Chemical family: acrylates

2. Hazards Identification

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Classification of the product

Flam. Liq.	2	Flammable liquids
Acute Tox.	3 (Inhalation - vapour)	Acute toxicity
Acute Tox.	4 (oral)	Acute toxicity
Acute Tox.	4 (dermal)	Acute toxicity

^{*} The "Recommended use" identified for this product is provided solely to comply with a Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

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Skin Corr./Irrit. 2 Skin corrosion/irritation Skin Sens. 1 Skin sensitization

STOT SE 3 (irritating to Specific target organ toxicity — single exposure

respiratory system)

Aquatic Acute 2 Hazardous to the aquatic environment - acute Aquatic Chronic 2 Hazardous to the aquatic environment - chronic

Label elements

Pictogram:





Signal Word: Danger

Hazard Statement:

H225 Highly flammable liquid and vapour.

H315 Causes skin irritation. H331 Toxic if inhaled.

H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.

H302 + H312 Harmful if swallowed or in contact with skin.

H401 Toxic to aquatic life.

H411 Toxic to aquatic life with long lasting effects.

Precautionary Statements (Prevention):

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves and eye protection or face protection.
P210 Keep away from heat, hot surfaces, sparks, open flames and other

ignition sources. No smoking.

P260 Do not breathe mist or vapour.
P273 Avoid release to the environment.
P243 Take action to prevent static discharges.

P241 Use explosion-proof electrical, ventilating and lighting equipment.
P272 Contaminated work clothing should not be allowed out of the workplace.

P270 Do not eat, drink or smoke when using this product.
P264 Wash contaminated body parts thoroughly after handling.

P242 Use non-sparking tools.

P240 Ground and bond container and receiving equipment.

Precautionary Statements (Response):

P311 Call a POISON CENTER or physician.

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for

breathing.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing.

Rinse skin with water or shower.

P361 + P364 Take off immediately all contaminated clothing and wash it before

reuse.

P330 Rinse mouth. P391 Collect spillage.

P370 + P378 In case of fire: Use water spray, dry powder, foam or carbon dioxide for

extinction.

Precautionary Statements (Storage):

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P233 Keep container tightly closed.

P403 + P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

Precautionary Statements (Disposal):

P501 Dispose of contents/container in accordance with local regulations.

Hazards not otherwise classified

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture. See section 12 - Results of PBT and vPvB assessment.

<u>Labeling of special preparations (GHS):</u>

Risk of hazardous polymerization under certain conditions (e.g. elevated temperatures, low inhibitor and oxygen concentration).

3. Composition / Information on Ingredients

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

tert-butyl acrylate

CAS Number: 1663-39-4 Content (W/W): >= 99.0%

Synonym: 2-Propenoic acid 1,1-dimethylethyl ester

acrylic acid

CAS Number: 79-10-7 Content (W/W): <= 0.2%

Synonym: 2-Propenoic acid; Acrylic acid

4. First-Aid Measures

Description of first aid measures

General advice:

First aid personnel should pay attention to their own safety. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). Immediately remove contaminated clothing.

If inhaled:

Keep patient calm, remove to fresh air, seek medical attention.

If on skin:

Immediately wash thoroughly with soap and water, seek medical attention.

If in eyes:

Wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

If swallowed:

Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

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Most important symptoms and effects, both acute and delayed

Symptoms: Overexposure may cause:, Eye irritation, skin irritation, erythema, allergic contact dermatitis, nausea, headache, vomiting, dizziness, diarrhea, abdominal cramps, Inhalation may provoke the following symptoms:, irritation of respiratory tract, coughing Hazards: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11. (Further) symptoms and / or effects are not known so far

Indication of any immediate medical attention and special treatment needed

Note to physician

Treatment: Treat according to symptoms (decontamination, vital functions), no

known specific antidote.

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media: dry powder, water spray, carbon dioxide, foam

Unsuitable extinguishing media for safety reasons: water jet

Additional information:

Use extinguishing measures to suit surroundings.

Special hazards arising from the substance or mixture

Hazards during fire-fighting:

Risk of violent self-polymerization if overheated in a container. Cool endangered containers with water-spray.

Flammable. See SDS section 7 - Handling and storage.

Advice for fire-fighters

Protective equipment for fire-fighting:

Firefighters should be equipped with self-contained breathing apparatus and turn-out gear. Special protective equipment for firefighters

Further information:

Extend fire extinguishing measures to the surroundings. Fight fire from maximum distance. Vapours are heavier than air and may accumulate in low areas and travel a considerable distance up to the source of ignition.

In case of a fire in the vicinity a restabilization system should be used if the temperature in the bulk storage-tank reaches 45°C. Evacuate area of all unnecessary personnel. In case of a fire in the vicinity evacuate all personnel in a greater area if the temperature in the bulk storage-tank reaches 60°C.

Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

Impact Sensitivity:

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Remarks: Based on the chemical structure there is no shock-sensitivity.

6. Accidental release measures

Further accidental release measures:

High risk of slipping due to leakage/spillage of product.

Release of substance/product can cause fire or explosion. Shut off or stop source of leak. Shut off or stop released substance/product under safe conditions.

Pack in tightly closed containers for disposal.

Personal precautions, protective equipment and emergency procedures

Handle in accordance with good industrial hygiene and safety practice.

Avoid all sources of ignition: heat, sparks, open flame. Use antistatic tools.

Environmental precautions

Substance/product is RCRA hazardous due to its properties.

Methods and material for containment and cleaning up

For large amounts: Pump off product.

Spills should be contained, solidified, and placed in suitable containers for disposal. Dispose of absorbed material in accordance with regulations. Ensure adequate ventilation. Suppress gases/vapours/mists with water spray jet. Clean contaminated floors and objects thoroughly with water and detergents, observing environmental regulations. Cleaning operations should be carried out only while wearing breathing apparatus. Pick up with suitable appliance and dispose of.

7. Handling and Storage

Precautions for safe handling

The substance/ product may be handled only by appropriately trained personnel. Facility parts must be checked for polymer residues and cleaned on regular basis in order to avoid hazardous reactions.

Ensure thorough ventilation of stores and work areas. Encapsulation or exhaust ventilation required. When filling, transferring, or emptying of containers, adequate local exhaust ventilation is necessary. Vent waste air to atmosphere only through suitable separators. Check the condition of seals and connector screw threads.

The temperatures which must be avoided are to be considered. Protect against heat. Protect from direct sunlight. Protect contents from the effects of light. Do not open warm or swollen product containers. Remove persons to safety and alert fire brigade.

Ensure adequate inhibitor and dissolved oxygen level.

Avoid inhalation of dusts/mists/vapours. Avoid aerosol formation. Avoid all direct contact with the substance/product.

Protection against fire and explosion:

Avoid all sources of ignition: heat, sparks, open flame. Substance/product can form explosive mixture with air. Ground all transfer equipment properly to prevent electrostatic discharge. It is recommended that all conductive parts of the machinery are grounded. Explosion-proof equipment is

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not necessary when loading and processing of the product takes place at a minimum of 5 °C below the flash point.

Heated containers should be cooled to prevent polymerization. If exposed to fire, keep containers cool by spraying with water. Emergency cooling must be provided for the eventuality of a fire in the vicinity.

Vapours are heavier than air and may accumulate in low areas and travel a considerable distance up to the source of ignition.

Conditions for safe storage, including any incompatibilities

Further information on storage conditions: Prior to storage ensure that the transfer equipment used and the intended storage containers do not contain other substances/products. Before transfer to stock the identity of the product must be proved to be without doubt. The entrance to storage rooms is to be granted only to appropriately trained personnel.

The stabilizer is only effective in the presence of oxygen. Maintain contact with atmosphere containing 5 - 21% oxygen. Never use tanks with inert-gas installation for storage.

Risk of polymerization. Protect against heat. Protect from direct sunlight. Avoid UV-light and other radiation with high energy. Protect against contamination.

In case of bulk storage, the storage-tanks should at least be equipped with two high temperature alert devices.

Even if the product is stored and handled as prescribed/indicated it should be used up within the indicated duration of storage.

Storage stability:

Storage temperature: < 35 °C Storage duration: 12 Months

8. Exposure Controls/Personal Protection

Components with occupational exposure limits

acrylic acid ACGIH, US: TWA value 2 ppm;

ACGIH, US: Skin Designation; Danger of cutaneous

absorption

ACGIH, US: Skin Designation; Danger of cutaneous

absorption

Advice on system design:

Ensure adequate ventilation.

Personal protective equipment

Respiratory protection:

Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator as needed.

Observe OSHA regulations for respirator use (29 CFR 1910.134).

Hand protection:

Chemical resistant protective gloves

Eye protection:

Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

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Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

General safety and hygiene measures:

Avoid contact with skin. Avoid inhalation of vapour. Wearing of closed work clothing is required additionally to the stated personal protection equipment. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and Chemical Properties

Form: liquid Odour: ester-like Odour threshold: not determined Colour: colourless pH value: not applicable Freezing point: approx. -69 °C Literature data.

No data available. Melting point:

119.2 °C Boiling point:

(1,013 hPa)

Boiling range: No data available.

Flash point: 14 °C (DIN 51755, closed

cup)

Flammability: Highly flammable. (derived from flash and boiling point)

Lower explosion limit: For liquids not relevant for

> classification and labelling. The lower explosion point may be 5 - 15 °C

below the flash point.

0.7 %(V) (7.5°C)

Upper explosion limit: For liquids not relevant for

classification and labelling.

7 %(V) (46 °C) 400 °C

Autoignition:

Literature data.

SADT: Not a substance/mixture liable to self-decomposition according

to GHS.

Vapour pressure: 20 hPa (measured)

> (23.4 °C) 84.7 hPa (50 °C)

Density: 0.88 g/cm3 (pyknometer)

(20°C)

Relative density: 88.0

(20°C)

Vapour density: 4.41 (calculated)

(20 °C)

Heavier than air.

Partitioning coefficient n-(OECD Guideline 2.32

octanol/water (log Pow): (25 °C) 107)

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Self-ignition Based on its structural properties the temperature: product is not classified as self-

igniting.

Thermal decomposition: No decomposition if stored and handled as

prescribed/indicated.

Viscosity, dynamic: approx. 0.5 - 1.0 mPa.s

(20°C)

By analogy with a product of similar

composition

Viscosity, kinematic: (20 °C)

not determined

Solubility in water: approx. 2 g/l

(25°C)

Solubility (qualitative): miscible

solvent(s): organic solvents,

Molar mass: 128.17 g/mol

Evaporation rate: Value can be approximated from

Henry's Law Constant or vapor

pressure.

10. Stability and Reactivity

Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals:

No corrosive effect on metal.

Oxidizing properties:

Based on its structural properties the product is not classified as oxidizing.

Formation of Remarks: Forms no flammable gases in the

flammable gases: presence of water.

Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions

Explosion and fire hazard exists under confined conditions. Ignitable air mixtures can form when the product is heated above the flash point and/or when sprayed or atomized. Formation of explosive gas/air mixtures.

Polymerization coupled with heat formation.

Risk of spontaneous polymerization by oxygen depletion of the liquid phase. Risk of spontaneous polymerization when heated or in the presence of UV radiation. Risk of spontaneous and violent self-polymerization if inhibitor is lost or product is exposed to excessive heat. Polymerization produces gases which may burst closed or confined containers. Reactions may cause ignition.

Risk of spontaneous polymerization in the presence of starters for radical chain reactions (e.g. peroxides). Reacts with nitric acid. Risk of spontaneous polymerization in the presence of oxidizing agents.

Hazardous reactions in presence of mentioned substances to avoid.

The product is stabilized against spontaneous polymerization prior to despatch. The product is stable if stored and handled as prescribed/indicated.

Conditions to avoid

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Avoid heat. Avoid oxygen content above the product of less than 5 %. Avoid UV-light and other radiation with high energy. Avoid direct sunlight. Avoid prolonged storage. Avoid inhibitor loss. Avoid excessive temperatures. Avoid all sources of ignition: heat, sparks, open flame. Avoid freezing. Avoid moisture.

Do not blanket with nitrogen.

Incompatible materials

radical formers, free radical initiators, peroxides, mercaptans, nitro-compounds, perborates, azides, ether, ketones, aldehydes, amines, nitrates, nitrites, oxidizing agents, reducing agents, strong bases, alkaline reactive substances, acid anhydrides, acid chlorides, concentrated mineral acids, metal salts polyvinylchloride

Inert gas

Hazardous decomposition products

Decomposition products:

Hazardous decomposition products: No hazardous decomposition products if stored and handled as prescribed/indicated.

Thermal decomposition:

No decomposition if stored and handled as prescribed/indicated.

11. Toxicological information

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity

Assessment of acute toxicity: Of moderate toxicity after short-term skin contact. Of moderate toxicity after single ingestion. Of pronounced toxicity after short-term inhalation.

Oral

Type of value: LD50 Species: rat (male/female)

Value: approx. 1,047 mg/kg (BASF-Test)

Inhalation

Type of value: LC50 Species: rat (male/female) Value: 7 mg/l (BASF-Test)

Exposure time: 4 h
The vapour was tested.

Dermal

Type of value: LD50 Species: rabbit

Value: 2,000 mg/kg (BASF-Test)

Assessment other acute effects

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Assessment of STOT single:

Causes temporary irritation of the respiratory tract.

Irritation / corrosion

Assessment of irritating effects: Skin contact causes irritation. Not irritating to the eyes.

Skin

Species: rabbit Result: Irritant. Method: BASF-Test

Eye

Species: rabbit Result: non-irritant Method: BASF-Test

Sensitization

Assessment of sensitization: Sensitization after skin contact possible.

Mouse Local Lymph Node Assay (LLNA)

Species: mouse Result: sensitizing

Method: OECD Guideline 429

Aspiration Hazard not applicable

Chronic Toxicity/Effects

Repeated dose toxicity

Assessment of repeated dose toxicity: The substance may cause damage to the olfactory epithelium after repeated inhalation.

Genetic toxicity

Assessment of mutagenicity: The substance was not mutagenic in bacteria. The substance was not mutagenic in mammalian cell culture. The substance was not mutagenic in a test with mammals.

Carcinogenicity

Assessment of carcinogenicity: In long-term animal studies in which the substance was given by inhalation, a carcinogenic effect was not observed. The substance showed no carcinogenic acitivity in animals after chronic administration to the skin. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Reproductive toxicity

Assessment of reproduction toxicity: Animal studies gave no indication of a fertility impairing effect at doses which were not toxic to the parental animals. The chemical structure does not suggest a specific alert for such an effect. The results were determined in a Screening test (OECD 421/422).

Teratogenicity

Assessment of teratogenicity: Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals. The chemical structure does not suggest a specific alert for such an effect. The results were determined in a Screening test (OECD 421/422).

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12. Ecological Information

Toxicity

Aquatic toxicity

Assessment of aquatic toxicity:

Acutely toxic for aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Toxicity to fish

LC50 (96 h) 2.37 mg/l, Leuciscus idus (DIN 38412 Part 15, static)

Aquatic invertebrates

EC50 (48 h) 8.74 mg/l, Daphnia magna (OECD Guideline 202, part 1, static)

The statement of the toxic effect relates to the analytically determined concentration. The product is highly volatile. Tested in a closed test system.

Aquatic plants

EC50 (72 h) 14.6 mg/l (growth rate), Desmodesmus subspicatus (OECD Guideline 201, static) The product is highly volatile. Tested in a closed test system. The statement of the toxic effect relates to the analytically determined concentration.

Chronic toxicity to fish

Study scientifically not justified.

Chronic toxicity to aquatic invertebrates

No observed effect concentration (21 d) 0.136 mg/l, Daphnia magna (OECD Guideline 211, semistatic)

The statement of the toxic effect relates to the analytically determined concentration. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

No observed effect concentration (21 d) 0.19 mg/l, Daphnia magna (Flow through.)

The statement of the toxic effect relates to the analytically determined concentration. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Assessment of terrestrial toxicity

No toxic effects have been observed in studies with soil living organisms. Study scientifically not justified.

Soil living organisms

Toxicity to soil dwelling organisms:

EC50 (28 d) > 1,000 mg/kg, soil dwelling microorganisms (OECD Guideline 217)

Toxicity to terrestrial plants

No data available.

Other terrestrial non-mammals

No data available.

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Microorganisms/Effect on activated sludge

Toxicity to microorganisms

OECD Guideline 209 aquatic activated sludge, domestic/EC20 (0.5 h): approx. 950 mg/l

Nominal concentration.

Persistence and degradability

Assessment biodegradation and elimination (H2O)

Moderately/partially biodegradable. Not readily biodegradable (by OECD criteria).

Elimination information

50 - 60 % CO2 formation relative to the theoretical value (28 d) (ISO 14593) (aerobic, activated sludge, domestic)

Assessment of stability in water

In contact with water the substance will hydrolyse slowly.

Information on Stability in Water (Hydrolysis)

 $t_{1/2} > 365 d$ (25 °C, pH value 7), (calculated, pH 7)

In contact with water the substance will hydrolyse slowly.

Bioaccumulative potential

Assessment bioaccumulation potential

Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

Bioaccumulation potential

Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

Mobility in soil

Assessment transport between environmental compartments

The substance will not evaporate into the atmosphere from the water surface.

Adsorption to solid soil phase is not expected.

13. Disposal considerations

Waste disposal of substance:

Incinerate or dispose of in a RCRA-licensed facility. Do not discharge into drains/surface waters/groundwater.

Container disposal:

Empty containers with less than 1 inch of residue may be landfilled at a licensed facility. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers. If containers are not empty, they must be disposed of in a RCRA-licensed facility.

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14. Transport Information

Land transport

USDOT

Hazard class: 3 Packing group: II

ID number: UN 1992 Hazard label: 3, 6.1, EHSM

Proper shipping name: FLAMMABLE LIQUID, TOXIC, N.O.S. (contains TERT-

BUTYLACRYLATE, STABILIZED)

Sea transport

IMDG

Hazard class: 3 Packing group: II

ID number: UN 1992 Hazard label: 3, 6.1, EHSM

Marine pollutant: YES

Proper shipping name: FLAMMABLE LIQUID, TOXIC, N.O.S. (contains TERT-

BUTYLACRYLATE, STABILIZED)

Air transport IATA/ICAO

Hazard class: 3

Packing group: II
ID number: UN 1992
Hazard label: 3, 6.1

Proper shipping name: FLAMMABLE LIQUID, TOXIC, N.O.S. (contains TERT-

BUTYLACRYLATE, STABILIZED)

15. Regulatory Information

Federal Regulations

Registration status:

Chemical TSCA, US released / listed

EPCRA 311/312 (Hazard categories): Refer to SDS section 2 for GHS hazard classes applicable for this product.

<u>CERCLA RQ</u> <u>CAS Number</u> <u>Chemical name</u>

5000 LBS 79-10-7; 540-88-5 acrylic acid; tert-butyl acetate

100 LBS 115-11-7; 75-65-0 2-methylpropene; 2-methylpropan-2-ol

NFPA Hazard codes:

Health: 2 Fire: 3 Reactivity: 2 Special:

HMIS III rating

Health: 2^m Flammability: 3 Physical hazard:1

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Assessment of the hazard classes according to UN GHS criteria (most recent version):

Flam. Liq. 2 Flammable liquids

Aquatic Acute 2 Hazardous to the aquatic environment - acute Aquatic Chronic 2 Hazardous to the aquatic environment - chronic

Acute Tox. 4 (oral) Acute toxicity
Acute Tox. 4 (dermal) Acute toxicity
Acute Tox. 3 (Inhalation - vapour) Acute toxicity
Skin Sens. 1 Skin sensitization

STOT SE 3 (irritating to Specific target organ toxicity — single exposure

respiratory system)

Skin Corr./Irrit. 2 Skin corrosion/irritation

16. Other Information

SDS Prepared by:

BASF NA Product Regulations SDS Prepared on: 2023/10/18

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

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