

Safety Data Sheet

Material Name: Stanadyne Gasoline Additive

*** SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ***

PRODUCT NUMBERS: 38557 (8oz./237ml); 45696 (12oz./355ml); 38558 (55gal./208L)

CHEMICAL NAME: Mixture

PRODUCT USE: Gasoline Fuel Additive

COMPANY INFORMATION:

Parker Engine Mobile Aftermarket Division
4400 Highway 30 E
Kearney, NE 68847 U.S.A.

Phone: 1-800-842-2496
Emergency # CHEMTREC 1-800-424-9300
CHEMTREC (Outside US & Canada) 1-703-527-3887

*** SECTION 2 – HAZARDS IDENTIFICATION ***

A. CLASSIFICATION OF THE SUBSTANCE OR MIXTURE:

Flammable Liquid 4 – H227	Combustible liquid.
Skin Irritation 2 – H315	Causes skin irritation.
Skin Sensitization 1 – H317	May cause an allergic reaction.
Carcinogenicity 2 – H351	Suspected of causing cancer.
STOT-SE3 – H336	May cause drowsiness or dizziness.
Aspiration Hazard 1 – H304	May be fatal if swallowed and enters airways.

OSHA defined hazards: None

B. LABEL ELEMENTS:

1. OSHA



DANGER

Combustible liquid. Causes skin irritation. May cause an allergic skin reaction. Suspected of causing cancer. May cause drowsiness or dizziness. May be fatal if swallowed and enters airways.

Obtain special instruction before use. Do not handle until all safety precautions have been read and understood. Keep away from flames and hot surfaces. No smoking. Wear protective gloves/protective clothing/eye protection. Wash thoroughly after handling. Avoid breathing mist/vapors/spray. Contaminated work clothing must not be allowed out of the workplace. Use only outdoors or in a well-ventilated area. If exposed or concerned: Get medical advice. If SWALLOWED: Immediately call a poison center or doctor. Do not induce vomiting. If INHALED: Remove person to fresh air and keep comfortable for breathing. Call a poison center or doctor if you feel unwell. If on SKIN: Wash with plenty of water. If skin irritation occurs: Get medical attention. Take off contaminated clothing and wash it before reuse. Store locked up. Store in a well-ventilated place.

Safety Data Sheet

Material Name: Stanadyne Gasoline Additive

Keep cool. Keep container tightly closed. Dispose of contents/container in accordance with local/regional/national regulations.

OTHER HAZARDS:
None identified.

2. CONSUMER PRODUCTS

Front: DANGER: HARMFUL OR FATAL IF SWALLOWED. VAPOR HARMFUL. CAUSES SKIN IRRITATION. KEEP OUT OF REACH OF CHILDREN. SEE BACK PANEL FOR ADDITIONAL HAZARDS AND PRECAUTIONS.

Back: Hazards: Contains petroleum distillates, butylated phenol, 2-ethylhexanol, ethoxylated amine and naphthalene. Harmful or fatal if swallowed. Causes skin irritation. May cause an allergic reaction. May cause drowsiness or dizziness. Contains small amount of naphthalene which is suspected of causing cancer. Precaution: Keep away from heat or flame. Avoid swallowing, contact with eyes or skin, or breathing vapor. Wash immediately after contact. Use in a well ventilated area. First Aid: If swallowed, do not induce vomiting – Call physician immediately. In case of contact, flush eyes with water and wash skin with soap and water. If eye discomfort persists, contact a physician. If affected by vapor, get fresh air – Call physician if symptoms persist.

* * * SECTION 3 - COMPOSITION / INFORMATION ON INGREDIENTS * * *

CAS #	CHEMICAL NAME	PERCENT (w/w)	INGREDIENT CLASSIFICATION*
64742-47-8	Distillates, petroleum, hydrotreated light	60-80	Flam. Liq. 4 – H227; Skin Irrit. 2 – H315; STOT-SE 3 – H304; Asp. 1 – H304; Aquatic Chron. 2 – H411
64741-86-2	Distillates, petroleum, sweetened middle	7-13	Flam. Liq. 3 – H226; Acute Tox. 4 – H332; Skin Irrit. 2 – H315; Asp. Tox. 1 – H304; Aquatic Chron. 2 – H411
64742-94-5	Naphtha (petroleum), heavy aromatic	5-7	Flam. Liq. 4 – H227; Asp. Tox. 1 – H304; Skin Irrit. 2 – H315; STOT-SE 3 – H335-336; Aquatic Chron. 2 – H411
128-39-2	2,6-di-tert butylphenol	1-2	Skin Irrit. 2 – H315; Aquatic; Aquatic Chron. 1 – H410
104-76-7	2-Ethylhexanol	1-2	Acute Tox. 4 – H332; Skin Irrit. 2 – H315; Eye Irrit. 2 – H319; STOT-SE 3 – H335
Proprietary	Ethoxylated amine	1-2	Acute Tox. 4 – H302; Eye Dam. 1 – H318; Met. Corr. – H290; Skin Corr. 1C – H314; Skin Sens. 1 – H317; Aquatic Acute 1 – H400
91-20-3	Naphthalene	0.1-0.5	Acute Tox. 4 – H302; Carc. 2 – H351; Aquatic Acute 1 – H400; Aquatic Chron. 1 – H410

COMPONENT RELATED REGULATORY INFORMATION

This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication). The specific chemical identity and the exact concentrations of one or more of the above listed components is being withheld as a trade secret.

Safety Data Sheet

Material Name: Stanadyne Gasoline Additive

* * * SECTION 4 - FIRST AID MEASURES * * *

DESCRIPTION OF FIRST AID MEASURES:

Eyes

Quickly and gently blot away excess chemical. Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 15 minutes or until the chemical is removed, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. Seek immediate medical attention.

Skin

Remove contaminated clothing. Quickly and gently blot away excess chemical. Wash gently and thoroughly with warm water and non-abrasive soap for 15 minutes or until the chemical is removed. Get medical attention if skin disorder develops.

Ingestion

Never give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. Have victim rinse mouth thoroughly with water. **DO NOT INDUCE VOMITING.** Have victim drink 8 to 10 oz. of water to dilute material in stomach. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Repeat administration of water. Seek immediate medical attention or advice.

Inhalation

If affected, remove source of contamination or move individual to fresh air. If the affected person is not breathing, trained personnel should begin artificial respiration immediately. Seek medical attention if symptoms persist. If overcome by vapor from hot product, immediately remove to fresh air and call a physician.

MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED:

Potential Health Effects: Eyes

This product may be irritating to the eyes. Effects may include a burning sensation, redness, swelling and/or blurred vision.

Potential Health Effects: Skin

This product is irritating to the skin. Prolonged or repeated contact with this product may dry and/or defat the skin. Symptoms may include redness, edema, drying or cracking of skin. Contact may cause an allergic skin reaction in sensitive individuals. See Section 11 for additional information.

Potential Health Effects: Ingestion

This product may be harmful if swallowed. May cause irritation of the mouth. Ingestion of this product may cause headache, dizziness, lack of coordination, and general weakness. Small amounts of this product, if aspirated into the lungs, may cause mild to severe pulmonary injury, possibly death. See Section 11 for additional information.

Potential Health Effects: Inhalation

Harmful if inhaled. Inhalation of oil mists or fumes can cause irritation of the mucous membranes and upper respiratory tract. Excessive inhalation of this material causes headache, dizziness, nausea, stupor, and other central nervous system effects leading to visual impairment, difficulty breathing, memory loss, convulsions and lack of coordination. Breathing of vapor or mist may aggravate asthma and inflammatory or fibrotic pulmonary disease. See Section 11 for additional information.

INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED:

Pulmonary aspiration hazard if swallowed; treat symptomatically.

Safety Data Sheet

Material Name: Stanadyne Gasoline Additive

*** SECTION 5 – FIRE FIGHTING MEASURES ***

GENERAL FIRE HAZARDS

Fire and explosion hazards are moderate when this product is exposed to heat or flame. Liquid can burn upon heating to temperatures at or above the flash point. Vapors are heavier than air and may travel along the ground to some distant source of ignition and flash back.

EXTINGUISHING MEDIA

Dry chemical, foam, carbon dioxide, water fog. Use water to cool fire-exposed containers and to protect personnel. Direct water spray or foam may cause frothing and spattering. If a leak or spill has not ignited, use water spray to disperse vapors and to flush spills away from exposure.

SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

Irritating and toxic gases or fumes may be released during a fire. Upon combustion, this product may yield oxides of nitrogen carbon monoxide, carbon dioxide, and/or other low molecular weight hydrocarbons.

ADVICE FOR FIREFIGHTERS

Firefighters should wear full-face, self-contained breathing apparatus and impervious protective clothing. Firefighters should avoid inhaling any combustion products.

NFPA RATINGS: Health: 2 Fire: 2 Reactivity: 0 Other:

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

*** SECTION 6 – ACCIDENTAL RELEASE MEASURES ***

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Eliminate all sources of ignition or flammables that may come into contact with a spill of this product. Surfaces may become slippery after spillage. Wear appropriate protective equipment and clothing during cleanup. Do not allow the spilled product to enter public drainage systems or open watercourses. If product is spilled, notify appropriate authorities at the local, state, federal, and provincial levels. Persons not wearing protective equipment should be excluded from area of spill until cleanup has been completed. Stop the flow of product, if this can be done without risk.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEAN-UP PROCEDURES

Absorb with non-flammable suitable absorbent such as sand or earth. Scoop up used absorbent into drums or other appropriate container.

*** SECTION 7 - HANDLING AND STORAGE ***

PRECAUTIONS FOR SAFE HANDLING

Avoid prolonged or repeated skin contact with this product. Avoid getting this product into contact with your eyes. Avoid the generation of mists. Wash thoroughly after handling. Use this product with adequate ventilation. Discard any shoes or clothing items that cannot be decontaminated.

CONDITIONS FOR SAFE STORAGE (including any incompatibilities)

Do not store near heat, sparks, open flame or strong oxidizing agents. Do not store this product in open or unlabeled containers. Store drums in a covered area with secondary containment. "Empty" containers retain product residue (liquid and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition; they may explode. Follow appropriate grounding procedures.

Safety Data Sheet

Material Name: Stanadyne Gasoline Additive

*** SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION ***

EXPOSURE GUIDELINES

A: General Product Information

Follow all applicable exposure limits. Under conditions which may generate mists, the component supplier recommends the OSHA PEL of 5 mg/m³ and the ACGIH STEL of 10 mg/m³ for oil mists. Included below are the OSHA Vacated permissible exposure limits (PELs).

B: Component Exposure Limits

Compound	ACGIH		NIOSH		OSHA		Other
	TWA	STEL	TWA	STEL	TWA	STEL	TWA
Petroleum distillates	N/E	N/E	350 mg/m ³ (C)	1800 mg/m ³	500 ppm 2000 mg/m ³	N/E	N/E
Trimethylbenzene (mixed)	N/E	N/E	25 ppm	N/E	N/E	N/E	N/E
Naphthalene	10 ppm	15 ppm	10 ppm	15 ppm	10 ppm	N/E	N/E

(S) - skin exposure

(C) - ceiling exposure

N/E - none established

ENGINEERING CONTROLS

Use general ventilation and use local exhaust, where possible, in confined or enclosed spaces.

PERSONAL PROTECTIVE EQUIPMENT

Eyes/Face

Wear safety glasses. Wear chemical goggles or face shield if mist is likely to occur.

Skin

Use impervious gloves. Wear oil-impervious garments if contact is unavoidable.

Respiratory

In the event of excessive exposure to vapors/mists/fumes, use NIOSH/OSHA approved respiratory equipment.

Respirator should be selected on the basis of form and concentration of contaminant.

General

Use good hygiene when handling petroleum product. Launder contaminated clothing before reuse. Excessive misting may cause slippery floors - wear appropriate footwear. Eye wash fountains are recommended.

*** SECTION 9 – PHYSICAL & CHEMICAL PROPERTIES ***

Appearance: Amber colored

Physical state: Liquid

pH: Not applicable

Initial boiling point & range: Not determined

Upper/lower flammability or explosive limits: Not determined

Auto-ignition temperature: Not determined

Odor: Oil/solvent

Odor threshold: Not applicable

Melting/freezing point: Not determined

Flash point: 158°F (70.0°C)

Flammability (solid, gas): Not applicable

Decomposition temperature: Not determined

Safety Data Sheet

Material Name: Stanadyne Gasoline Additive

Vapor density: Not determined
Solubility: Negligible
Evaporation rate: Not determined
Relative density: 0.803

Vapor pressure: Not determined
Partition coefficient: Not determined
Viscosity: Not determined
Density: Not determined

*** SECTION 10 - CHEMICAL STABILITY & REACTIVITY INFORMATION ***

REACTIVITY: Not reactive

CHEMICAL STABILITY: Stable

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

CONDITIONS TO AVOID: Heat, ignition sources and sparks.

INCOMPATIBILITY: This product may react with strong oxidizing agents.

HAZARDOUS DECOMPOSITION: Decomposition of this product may yield carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.

*** SECTION 11 - TOXICOLOGICAL INFORMATION ***

DESCRIPTION OF THE VARIOUS TOXICOLOGICAL EFFECTS

Likely Routes of Exposure

Inhalation, Skin

Symptoms Related to the Physical, Chemical and Toxicological Characteristics (including immediate and delayed effects and chronic effects for short- and long-term exposure)

This product is irritating to the skin. Excessive inhalation of this product causes headache, dizziness and incoordination.

This product may cause nervous system effects including peripheral neuropathy. This product contains a chemical(s) which has been shown to cause cancer in laboratory animals. A component of this product has been reported to cause birth defects and/or other reproductive harm. Components of this product may have adverse effects on the blood-forming system. Irritating and toxic vapors may be released upon combustion of product.

Potential Health Effects: Eyes

Effects in sensitive individuals may include a burning sensation, redness, swelling and/or blurred vision.

Potential Health Effects: Skin

This product is irritating to the skin. Prolonged or repeated contact with this product may dry and/or defat the skin.

Symptoms may include redness, edema, drying or cracking of skin. Product contains component(s) that can be harmful if absorbed through the skin. Product contains component(s) that may cause an allergic skin reaction in susceptible individuals.

Potential Health Effects: Ingestion

This product may be harmful if swallowed. May cause irritation of the mouth, gastrointestinal lining, nausea, vomiting, diarrhea, and abdominal pain. Ingestion of this product may cause headache, dizziness, lack of coordination, and general weakness. Small amounts of this product, if aspirated into the lungs, may cause mild to severe pulmonary injury, possibly death. Ingestion of this product may cause red blood cell hemolysis and possible liver and kidney injury.

Safety Data Sheet

Material Name: Stanadyne Gasoline Additive

Potential Health Effects: Inhalation

Inhalation of oil mists or fumes can cause irritation of the mucous membranes and upper respiratory tract. Excessive inhalation of this material causes headache, dizziness, nausea, stupor, and other central nervous system effects leading to visual impairment, difficulty breathing, memory loss, convulsions and lack of coordination. Repeated and prolonged overexposure to oil mists may result in droplet deposition, oil granuloma formation, inflammation and increased incidence of infection. Breathing of vapor or mist may aggravate asthma and inflammatory or fibrotic pulmonary disease. Repeated overexposure to naphthalene may cause destruction of red blood cells with anemia, fever, jaundice and kidney and liver damage.

Data and/or Acute Toxicity Estimates

No data available on product as a whole.

CAS #	Component	Percent	LD50 – Oral (rat)	LD50 – Dermal (rabbit)	LC50 – Inhalation (rat)
64742-47-8	Distillates, petroleum, hydrotreated light	60-80	LD50 (rat) > 5000 mg/kg	LD50 (rabbit) = 2000 – 4000 mg/kg	LC50 (rat) >4.3 mg/l
64741-86-2	Distillates, petroleum, sweetened middle	7-13	LD50 (rat) > 5000 mg/kg	LD50 (rabbit) >2000 mg/kg	LC50 (rat) =4.6 mg/l (4 hr)
64742-94-5	Naphtha (petroleum), heavy aromatic	5-7	LD50 (rat) > 5000 mg/kg	LD50 (rabbit) >3160 mg/kg	LC50 (rat) >0.17 mg/l (4 hr; no deaths)
128-39-2	2,6-di-tert-butylphenol	1-2	LD50 (rat) > 5000 mg/kg	Not classified; data unavailable	Not classified; data unavailable
104-76-7	2-Ethylhexanol	1-2	LD50 (rat) =3290 mg/kg	LD50 (rabbit) >3000 mg/kg	LC50 (rat) >0.89 mg/l (4 hr)
Proprietary	Ethoxylated amine	1-2	ATE = 500	Not classified; data unavailable	Not classified; data unavailable
91-20-3	Naphthalene	0.1-0.6	490 mg/kg	> 20 g/kg	> 340 mg/m3 (1H)

One or more components have produced damage after prolonged exposure in laboratory animals to one or more of the following: kidneys, liver, spleen, blood and/or circulatory system. Naphthalene has been shown to cause cancer in laboratory animals and is classified Group 2B by IARC.

Category	Classification Based on Available Data
Acute toxicity:	Conclusive but not sufficient for classification
Skin/eye irritation:	Skin irritation 2 (component additivity)

Safety Data Sheet

Material Name: Stanadyne Gasoline Additive

Category	Classification Based on Available Data
Corrosivity:	Conclusive but not sufficient for classification
Respiratory or skin sensitization:	Respiratory: Conclusive but not sufficient for classification Skin: Sensitizer
Germ cell mutagenicity:	Data lacking
Carcinogenicity:	Contains naphthalene which is suspected of causing cancer based on animal studies.
Reproductive toxicity:	Data lacking
STOT-SE:	STOT 3 (CNS effects, respiratory irritation)
STOT-RE:	Data lacking
Aspiration hazard:	Asp. 1

* * * SECTION 12 - ECOLOGICAL INFORMATION * * *

No ecotoxicity or environmental fate data available on product as a whole.

A summary of aquatic toxicity data for components of this product is available upon request.

* * * SECTION 13 - DISPOSAL CONSIDERATIONS * * *

US EPA WASTE NUMBER & DESCRIPTIONS

User must test waste using methods described in 40 CFR Part 261 to determine if it meets applicable definitions of hazardous waste. If disposed of as shipped, this product may be considered a D001 ignitable waste.

DISPOSAL INSTRUCTIONS

Dispose of waste product according to local, state, federal, and provincial environmental regulations. Do not allow this product to drain into sewers/water supplies. Product should be recycled if possible.

* * * SECTION 14 - TRANSPORTATION INFORMATION * * *

General Transportation Information

NOTE: Information in this section (Section 14) is presented as a guide only. Requirements may vary depending upon package size and exceptions used, if any. Follow current, applicable requirements under DOT, TDG, IMO/IMDG, and ICAO/IATA to ensure regulatory compliance.

U.S. Department of Transportation Regulations Ground Transportation

Non-bulk. Not regulated based on Combustible Liquid exception [49CFR 173.150(f)]. Review and follow all requirements pertaining to this exception. See also 49 CFR 171.4(c). Naphthalene: RQ 100 lbs.

Canadian TDG Regulations Ground Transportation

Non-bulk. Not regulated based on exception, Canada TDG, Part I, Section 1.33. Review and follow all requirements pertaining to this exception.

ICAO/IATA

UN3082, Environmentally Hazardous Substance, Liquid, N.O.S. (petroleum naphthas), 9, PG III

IMO/IMDG

Safety Data Sheet

Material Name: Stanadyne Gasoline Additive

UN 3082, Environmentally Hazardous Substance, Liquid, N.O.S. (petroleum naphthas) 9, PG III, (61.1°C c.c.), Marine Pollutant

EmS: F-A, S-F

*** SECTION 15 - REGULATORY INFORMATION ***

US Federal Regulations

A: General Product Information

Components listed in Section 3 of the SDS are present on the TSCA Inventory. This product is a registered fuel additive (40 CFR 79) – Registration #125520004.

B: Component Analysis

This product contains the following chemicals required to be identified under SARA Section 313 (40 CFR 372.65).

Naphthalene (91-20-3)

C. Component Marine Pollutant

This material contains petroleum naphthas which are required by US DOT to be identified as marine pollutants.

D. State of California Proposition 65

This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute:

Naphthalene

Benzene

Other Regulations

Components listed in Section 3 of the SDS are present on the DSL Inventories. This product has been classified in accordance with the hazard criteria required by the Canadian Hazardous Product Act and the SDS contains all the information required by the Canadian Hazardous Products Regulations.

WHMIS Classification: Flam. Liq. 4 – H227; Skin Irrit. 2 – H315; Skin Sens. 1 – H317; Carc. 2 – H351; STOT-SE3 – H335 & H336; Asp. 1 – H304.

*** SECTION 16 - OTHER INFORMATION ***

OTHER INFORMATION

HAZARD STATEMENTS FROM SECTION 3

H226 – Flammable liquid and vapor.

H227 – Combustible liquid.

H290 – May be corrosive to metals.

H302 – Harmful if swallowed.

H304 – May be fatal if swallowed and enters airways.

H314 – Causes severe skin burns and eye damage.

H315 – Causes skin irritation.

H317 – May cause an allergic skin reaction.

H318 – Causes serious eye damage.

H319 – Causes serious eye irritation.

H332 – Harmful if inhaled.

H335 – May cause respiratory irritation.

H336 – May cause drowsiness or dizziness.

H351 – Suspected of causing cancer.

H400 – Very toxic to aquatic life.

H410 – Very toxic to aquatic life with long lasting effects.

H411 – Toxic to aquatic life with long lasting effects.

Safety Data Sheet

Material Name: Stanadyne Gasoline Additive

HMIS Ratings: Health: 2* Fire: 2 Reactivity: 0 Pers. Prot.: impervious gloves/safety glasses (chemical goggles if splashing is possible)

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

Other Information

The information and recommendations presented in this Safety Data Sheet are based on sources believed to be reliable on the date hereof. Parker Engine Mobile Aftermarket Division makes no representation on its completeness or accuracy. This product is sold "as is" and it is the user's responsibility to determine the product's suitability for its intended use, the product's safe use, and the product's proper disposal. The statements and descriptions provided are informational only and no representations or warranties, either expressed or implied, of merchantability or fitness for a particular purpose or of any other nature are made with respect to the information provided in this Safety Data Sheet or to the product to which such information refers. Parker Engine Mobile Aftermarket Division neither assumes nor authorizes any other person to assume for it, any other or additional liability or responsibility resulting from the use of, or reliance upon, this information. Parker Engine Mobile Aftermarket Division assumes no responsibility for injury to recipient or to third persons or for any damage to any property and recipient assumes all such risks.

Key/Legend

N=No; Y=Yes; ppm - parts per million; mg/m³ = milligrams per cubic meter of air; ACGIH = American Conference of Governmental Industrial Hygienists; OSHA = Occupational Safety and Health Administration; TLV = Threshold Limit Value; NIOSH = National Institute of Occupational Safety and Health; IDLH = Immediately Dangerous to Life or Health Concentrations; NTP = National Toxicology Program; IARC = International Agency for Research on Cancer; TSCA = Toxic Substance Control Act; DSL = Dangerous Substances List; EINECS = European Inventory of New and Existing Chemical Substances

Contact: For further information call 1-800-842-2496

This is the end of the SDS