

## Profile

June 2021

## Solder Technology

Backed by 70 years of experience in the manufacture of solder products

National Solder Company (Pty) Ltd.

13 Arkin Street,  
Industries East  
Germiston  
South Africa  
1401

[info@nationalsolder.com](mailto:info@nationalsolder.com)  
[www.nationalsolder.com](http://www.nationalsolder.com)

# National Solder Company (Pty) Ltd.

## NASCO



### Our Company

NASCO, National Solder Company (PTY) LTD, is a leading South African manufacturer and supplier of solder, tin and lead products, established in 1939. Our products serve a wide range of industries including the electrical, electronic, plumbing, engineering, jewellery and automotive industries. We have the capacity to produce and deliver over 40 metric tons per month of quality products across Sub-Saharan Africa and our reach extends as far north as Malawi. NASCO offers the following product solutions:

- Electronic Solder Pastes
- Cored Solder Wires
- Solid Solder Wires
- Solder Sticks / Blowpipes and Wiping Metals
- White Metal Alloys
- Jewellery Metals
- Lead and Tin Products
- Solder Paints
- Fluxes and Cleaners
- Tinning Compounds

NASCO's responsibility is to continuously improve on all aspects of solder manufacturing as we move towards our goal of being a world class solder producer. NASCO's SATAS certification, which conforms with SANAS, provides customers with peace-of-mind and highlights NASCO's efforts and dedication to produce high-quality and reliable products.

NASCO prides itself on being a customer focused company that produces high-quality products at market competitive prices in the shortest turn-around times possible.

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## Technical Advice

We provide after-sales services in the form of technical, design and usage advice as well as problem identification and solutions

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NASCO aims to inspire its employees to be the best as we engage in sustainable practices and anticipate the ever-changing needs of the industries we serve.

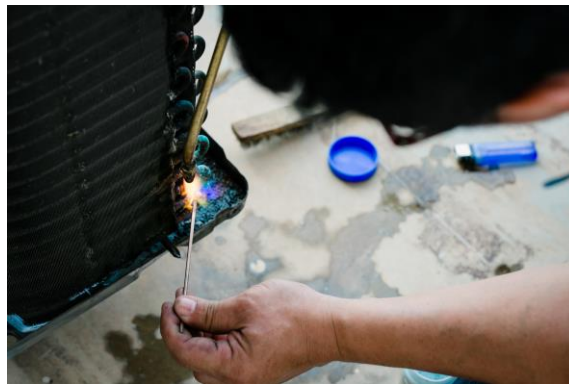
NASCO's mission is to be an efficient and growth-oriented company, that offers service to our customers that is passionate, simple, professional and innovates constantly to achieve excellence.

NASCO is a culturally and ethnically diverse team, united in a common purpose which is to provide quality service and products to our customers.

## Our Experience

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The current NASCO team has over 70 years of experience, combined, in the manufacturing of solder products. This wealth of experience, combined with youthful exuberance, ensures that the company continues to grow whilst providing the highest quality products.



## Our B-BBEE Level

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National Solder Company is a 100% black owned company.



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## Quality Assurance

NASCO prides itself on producing high-quality solder, tin, lead and flux products to meet the requirements of our customers

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# Our Products

## Solder Wires

NASCO produces high grade solid and cored solder wires catering to the plumbing, electrical, electronic and hardware industries. Our solder wires are SATAS approved, batch tracked and manufactured to the highest quality standards giving our customer's peace of mind.

We produce both leaded and lead-free solder wires.

Our wires vary in gauge from 0.71mm to 3.15mm and are available in 250g, 500g, 3kg and 5kg reels.



Below, please see our range of Resin-Cored Solder wires and their uses:

**Table 1: Resin-Cored wires**

Solder Grade	Approximate melting range °C	Typical uses
63T-	183	Electrical, electronic, and other assemblies and components that must not be overheated or that require a free-running solder. Radio, telephone, and instrument assemblies: printed circuits and miniaturization work. Machine soldering of can end-seams. Protective coating.
60T-	183-189	
40T-	183-234	Generally used for the same purposes as the 50-grade solders. Also, as a wiping solder and for electric lamp manufacture.
30T-	183-255	Electric fuses, motors and dynamos. Plumber's wiped joints. Filling solder for car bodies, etc.

Below please see our range of Acid-Cored Solder wires and their uses:

**Table 2: Acid Cored wires**

Solder Grade	Approximate melting range 0 °C	Typical uses
30-S	183-255	Wiping solder, electric lamp manufacture, car body filling, general metal work.
40-S	183-234	General metal work, assemblies that require a free-running soldering, electric lamp manufacture, engine radiator manufacture.

Please see table 4, under Soft Solders, for our range of solid wires.

**NASCO also produces solder wires to customer specifications that may vary from our standard product range.**

## White Metals

NASCO produces a wide range of White Metal alloys catering to the bearing, mining and engineering industries. Our White Metal products are SATAS approved and are also manufactured to the highest international standards.



The table below summarizes our White Metal alloys and their applications:

**Table 3: White Metal alloys**

Alloy	Nominal composition, per cent.	Pouring temperature, °C	Typical applications
WM 90	Tin 90 Antimony 7 Copper 3	340-370	Crankshaft; main bearings and connecting rods; big end bearings.
WM 84	Tin 84 Antimony 10 Copper 6	410-460	Turbines; gas engines; high speed engines; locomotives; thrust bearings; motor bearings; reduction of gears; transmission bearings of electric units.
WM 80	Tin 80 Antimony 9 Copper 6 Lead 5	410-460	As for WM 84
WM 72	Tin 72 Antimony 10 Copper 6 Lead 12	410-450	Bearing metal in loco and tender bearings; axle boxes (oil lubrication); connecting rod bushes; brass eccentric strips.
WM 40	Tin 40 Antimony 15 Copper 3 Lead 42	350-400	Petrol and diesel engine bearings other than specified above; electric motors and generators; fans and blowers; general engine work.
WM 15	Tin 15 Antimony 14 Copper 0.5 Lead 70.5	330-360	A babbitt for moderate loads and speeds; blowers; pumps; electric motors; machine tools.
WM 6	Tin 6 Antimony 14 Lead 80	320-340	A lead base babbitt for light loads and moderate speeds; mining machinery; transmission machinery; journals; used with all kinds of shafting.

## Soft Solders

NASCO produces a wide range of soft solders to meet the requirements of several industries. We produce both SANAS approved and commercial solders of varying compositions with the primary aim of joining two metals together at relatively low temperatures.

**Our soft solders are available in solid wire, stick, blowpipe, ingot and bar form.**



The table below summarizes our soft solder alloys and their applications:

**Table 4: Soft Solders**

SANS alloy No.	Alloy designation	Melting or solidus/liquidus temperature °C	Typical uses
S1	Sn65PbSb	183-186	Commutator work. Fine jointing where minimum heat input is required. Electronic and telecommunication equipment.
S2	Sn50PbSb3	185-204	General purpose solder for long seams, can ends, etc., using bit or machine. Not suitable for zinc or galvanized articles.
S3	PbSn40Sb2	185-228	General purpose solder with higher melting point than S2. Not suitable for use in zinc or galvanized articles.
S4	PbSn40	183-235	Low antimony solder for machine soldering of electrical parts. Suitable for use on zinc and cadmium coatings. Tinning of sheet metal, pip, etc.
S5	PbSn30Sb	185-250	Wiping solder for lead sheathing and automotive bodies.
S6	Sn50Pb	183-215	General engineering work particularly for copper, brass and zinc. Good tinning qualities.
S7	PbSn35	183-245	Joining of lead cable sheaths. (Similar to S5 but with higher tin content)
S8	Sn60Pb	183-190	Suitable for all type of electrical and electronic connections in telecommunications, printed circuit boards, etc., using hand machine

			techniques. Good capillary action with copper and stainless steel.
S9	PbSn30	183-255	Low-grade general-purpose solder for hand work, and wiped joints lead cable sheathing and automotive bodies.
S10	PbSn26Sb	185-260	Automotive body solder for dents and seams. Substitute for S5.
S11	PbSn26	183-265	Automotive body solder for less critical work. Substitute for S9.
S12	PbSn2Sb5	240-285	Automobile body solder – shallow areas.
S13	PbSn5Sb4	240-280	Tubular radiator manufacture. Hot dip coatings.
S14	PbSn20Sb	185-270	Automobile body filler. Radiator manufacture.
S15	PbSn15	226-289	Lamp soldering. Dip soldering. Usable at -60 °C.
S16	PbSn45Sb2	185-215	Engineering work. Good capillary action on ferrous and non-ferrous materials.
S17	Sn63PbP	183-185	Electronic or printed circuit board connections, particularly in mechanized systems.
S18	SnSb5	232-240	Electric motor and refrigeration industry. High temperature service. Good capillary action.
S19	SnCu3	230-250	Good capillary action in copper piping installations requiring a lead-free, non-toxic alloy.
S20	SnAg4	221	Good capillary action in copper piping systems, in food processing, pharmaceuticals, refrigeration, etc. High temperature resistance for hot water systems.
S21	SnZn25	190-210	Low melting point, general purpose solder for cable jointing and pre-tinning. Soldering of aluminium.
S22	PbAg5	296-301	Assembly of automotive radiators.
S23	PbSn4Ag	300-307	Assembly of automotive radiators.
<p>NOTES</p> <ol style="list-style-type: none"> <li>1. All single figure limits are maxima.</li> <li>2. Elements shown as “Rem” (i.e. remainder) are calculated as differences from 100%.</li> <li>3. The temperatures given under heading “Melting or solidus/liquidus temperature” are for information purposes and are not requirements for the alloys.</li> </ol>			

# Contact Us

Company Name  
National Solder Company  
Street Address  
13 Arkin Street  
City, Code  
Germiston, 1401  
Phone  
+27 11 873 9000  
Email  
info@nationalsolder.com  
Website  
www.nationalsolder.com

## Specialized Alloys, Extrusions and Castings

NASCO works closely with customers to develop, engineer and manufacture specialized, customer specific, alloys. Our team uses its years of experience to assist customers who require solutions specific to their requirements and processes.

Together with developing these specialized alloys, we are able to provide the products in whatever shape or form our customers require, whether it be extrusions or castings.

## Our Fluxes and Cleaners

NASCO has a wide range of fluxes and cleaners developed to prepare and clean surfaces to ensure effective soldering. We also manufacture the only water-based flux for plumbing applications in the country.



We have high-quality fluxes that cater to the plumbing, electrical, electronic and general-purpose soldering industries.

## Trade Partners

NASCO prides itself in building long-term relationships with key customers. We currently have numerous long-standing contracts with large local and global entities, as seen below:

