

# 2011 Sonata Hybrid

## All-New Sonata Hybrid



Hyundai's first U.S. hybrid engine with breakthrough Lithium Polymer battery technology. In the 2011 Sonata Hybrid, Hybrid Blue Drive is now a full parallel hybrid system. The Sonata Hybrid can be driven in zero-emissions, fully electric drive mode at speeds of up to 62 mph or in blended gasoline-electric mode at any speed.

Direct Hybrid Blue Drive uses a Transmission-Mounted Electric Drive (TMED) layout where the motor is separated from the transmission gear-set. This layout offers a number of advantages.

Separating the motor from the gear set provides the flexibility to accommodate different applications, it also is one of the main factors contributing to Sonata's superior highway fuel efficiency.

**The Hybrid Starter-Generator (HSG):** 8.5 kW starter-generator is only used to start the engine and charge the hybrid battery.

**Regenerative Braking:** Converting the kinetic energy into electrical energy rather than thermal energy through the friction brakes reduces the wear on the brake linings so they last longer.

**Electric Power-Assisted Steering (EPAS) and Air Conditioning:** The EPAS is independent of the engine so it provides assistance when the engine is not running or is in electric drive mode. The air conditioning also features an electrically driven compressor so the interior temperature is maintained during engine-off driving and allows for more precise on-demand control, cutting fuel consumption.

The Atkinson Cycle engine allows the **2.4-liter MPI Theta II engine** run more efficiently by increasing the combustion ratio and decreasing friction loss, resulting in improved economy.

**Thermal Management:** Two independent liquid cooling circuits, one for high temperatures in the engine and heating the passenger compartments, and the second to manage the HSG and electronics.

**Reduced Coast-Down Losses:** Aerodynamically designed to reduce the coefficient of drag (0.25 Cd) so it matches the Prius and beats many other cars.

## Performance

- 2.4-liter MPI Theta II engine:
  - 166 horsepower @ 6,000 rpm (estimated)
  - 154 lb.-ft. of torque @ 4,250 rpm (estimated)
  - DOHC 16-valve with dual-camshaft Continuously Variable Valve Timing (CVVT)
- Electric motor:
  - 40.2 horsepower (30 kW) @ 1,400-6,000 rpm (Estimated)
  - 151.2 lb.-ft. of torque @ 0-1,400 rpm (estimated)
  - Interior-Permanent Magnet Synchronous Motor
  - Lithium-Polymer battery (34 kW)
- Hybrid system combined performance
  - 206 horsepower @ 6,000 rpm (estimated)
  - 193 lb.-ft. of torque (estimated)



- Hybrid-electric engine with integrated hybrid starter-generator (HSG)
- 6-speed automatic transmission
- 16-inch alloy wheels (standard)/17-inch alloy wheels (optional)

## Hybrid Vehicle Operation

Launch	Gentle Acceleration	Cruise	Full Acceleration	Deceleration	Stop
EV Mode	Engine Drive	EV Mode/Engine Drive	Power Assist	Regenerative	Engine Stop

SONATA

hybrid

blue drive

EPA-estimated city/highway fuel economy of 36/40 mpg



- Advantages over Nickel-Metal Hydride batteries used in competitors' hybrid models:

- 25% less weight: improves fuel economy
- 40% less volume: improves interior space
- 10% more efficiency: smarter, better performance



- Advantages over Lithium-Ion batteries:

- More compact
- Greater power density
- Lower vehicle weight
- Low heat generation improves the life cycle
- Low self-discharge improves battery storage life



## Comfort and Convenience

- Proximity entry with push-button start
- Dual automatic temperature control with floor console-mounted rear vents
- Tilt and telescopic steering wheel with steering wheel-mounted cruise and audio controls
- Multi-function trip computer with hybrid technology 4.2-inch Thin Film Transistor display
- 8-way power-adjustable driver seat with power lumbar controls
- Metalgrain interior accents
- AM/FM/XM/CD/MP3 with iPod/USB and Auxiliary input jacks
- Power windows, locks, heated mirrors
- Integrated Bluetooth® with phonebook transfer
- Solar control glass
- Electroluminescent cluster (Supervision)
- Chrome interior door handles
- Leatherette interior door panel inserts
- Automatic light control



## Advanced Safety Technology

- ESC/TCS/ABS/TPMS
- Front active head restraints
- Front, front seat side and curtain airbags
- Daytime Running Lights (DRL)
- Side mirror turn signal indicators
- **Virtual Engine Sound System:** When activated, this feature transmits an artificial engine noise when the vehicle is operating in EV-only mode. This feature enhances safety to pedestrians by alerting them of the vehicle approaching when it is operating in silent EV-only mode.

## Exterior

- Bodycolor front grille and chrome window belt-line moldings
- Unique, tinted chrome front grille
- Bodyside molding tinted chrome inserts
- Headlight LED accents
- LED taillights
- Front fog lights
- Chrome exterior door handles
- Glossy black door surround and outside mirror housing



### Popular Accessories

Floor Mats	Rear Bumper Applique
All-Weather Floor Mats	Auto-dimming rearview mirror with HomeLink® and compass
Cargo Mat	Remote Start
Cargo Net	Sunroof Wind Deflector
Mud Guards	Hyundai iPod® Cable

## Hybrid Model Visual Differentiation

- Front fascia (front bumper and grille)
- Headlight LED accents
- Front fog light design
- Blue Drive badge on front fenders
- Rear bumper
- LED combination taillights
- Special 16- and 17-inch alloy wheels (reduces CD)
- 4.2-inch LCD display in instrument cluster



## Premium Package

- Navigation system with high-resolution touch-screen display
- Rear backup camera
- Panoramic sunroof with tilt and slide
- 17-inch alloy wheels
- Leather seating surfaces with heated front seats and rear seat bottom cushions
- Infinity premium speakers, subwoofer/external amplifier
- HD Radio Technology with multicasting
- Leather-wrapped steering wheel and shift knob
- Auto-dimming mirror/HomeLink®/compass
- Premium door sill plates



## Color

Exterior Colors			Interior Colors			
Color Name	Code	Type	Cloth		Leather	
			Gray	Camel	Gray	Camel
Silver Frost Metallic	Y5	Metallic	•		•	
Hyper Silver Metallic	FHM	Metallic	•		•	
Porcelain White Pearl	WHC	Mica	•	•	•	•
Blue Sky Metallic	Y2U	Metallic	•		•	
Black Onyx Pearl	AA	Mica	•	•	•	•
Venetian Red Pearl	RER	Mica		•		•

## Competitive Comparison

	2011 Sonata	2011 Camry	2011 Altima	2011 Fusion
Engine	2.4-liter I4	2.4-liter I4	2.5-liter I4	2.5-liter I4
Horsepower	166	147	158	156
Electric Motor (v)	270	245	245	275
Net Horsepower	209	187	198	191
Battery Technology	Lithium-Polymer	Nickel-Metal Hydride	Nickel-Metal Hydride	Nickel-Metal Hydride
Coefficient of Drag	0.25	0.27	0.31	0.33
Fuel Economy—City/Highway (mpg)	36/40*	31/35	35/33	41/36
Passenger Volume (cu. ft.)	103.8	101.4	100.7	99.8
Cargo Volume (cu. ft.)	10.7	10.6	10.1	11.8
Total Interior Volume (cu. ft.)	114.5	112.0	110.8	111.6
Standard Airbags	6	7	6	6
Active Front Head Restraints	Yes	No	Yes	No
ESC with Traction Control	Yes	Yes	Yes	Yes
ABS	Yes	Yes	Yes	Yes
Electronic Brake Force Distribution with Brake Assist	Yes	Yes	No	Yes
Daytime Driving Lights	Yes	Yes	No	No

\* Estimated

## 2011 Sonata Hybrid: Available in One Trim Level

### Includes Sonata 2.4 GLS Equipment Plus

- Hybrid-electric engine with hybrid starter-generator (HSG)\*
- Electroluminescent cluster (Supervision)\*
- Multi-function trip computer with hybrid technology 4.2-inch Thin Film Transistor display\*
- 16-inch alloy wheels with unique finish\*
- Unique, tinted chrome front grille\*
- Bodyside molding tinted chrome inserts\*
- Headlight LED accents\*
- LED taillights\*
- Front fog lights
- Chrome exterior door handles
- Side mirror turn signal indicators
- Proximity entry with push-button start
- Dual automatic temperature control
- Power driver seat with lumbar support
- Chrome interior door handles
- Leatherette interior door panel inserts
- Automatic light control
- Floor console-mounted rear vents
- Glossy black door surround and outside mirror housing

### Premium Package

- Navigation system with high-resolution touch-screen display
- Rear backup camera
- Panoramic sunroof with tilt and slide\*
- 17-inch alloy wheels
- Leather seating surfaces with heated front seats and rear seat bottom cushions
- Infinity premium speakers, subwoofer/external amplifier
- HD Radio Technology with multicasting
- Leather-wrapped steering wheel and shift knob
- Auto-dimming mirror/HomeLink®/compass
- Premium door sill plates

\* Unique to Sonata Hybrid

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