JX42 V2

Guitar & Amp Switcher

OWNER'S MANUAL

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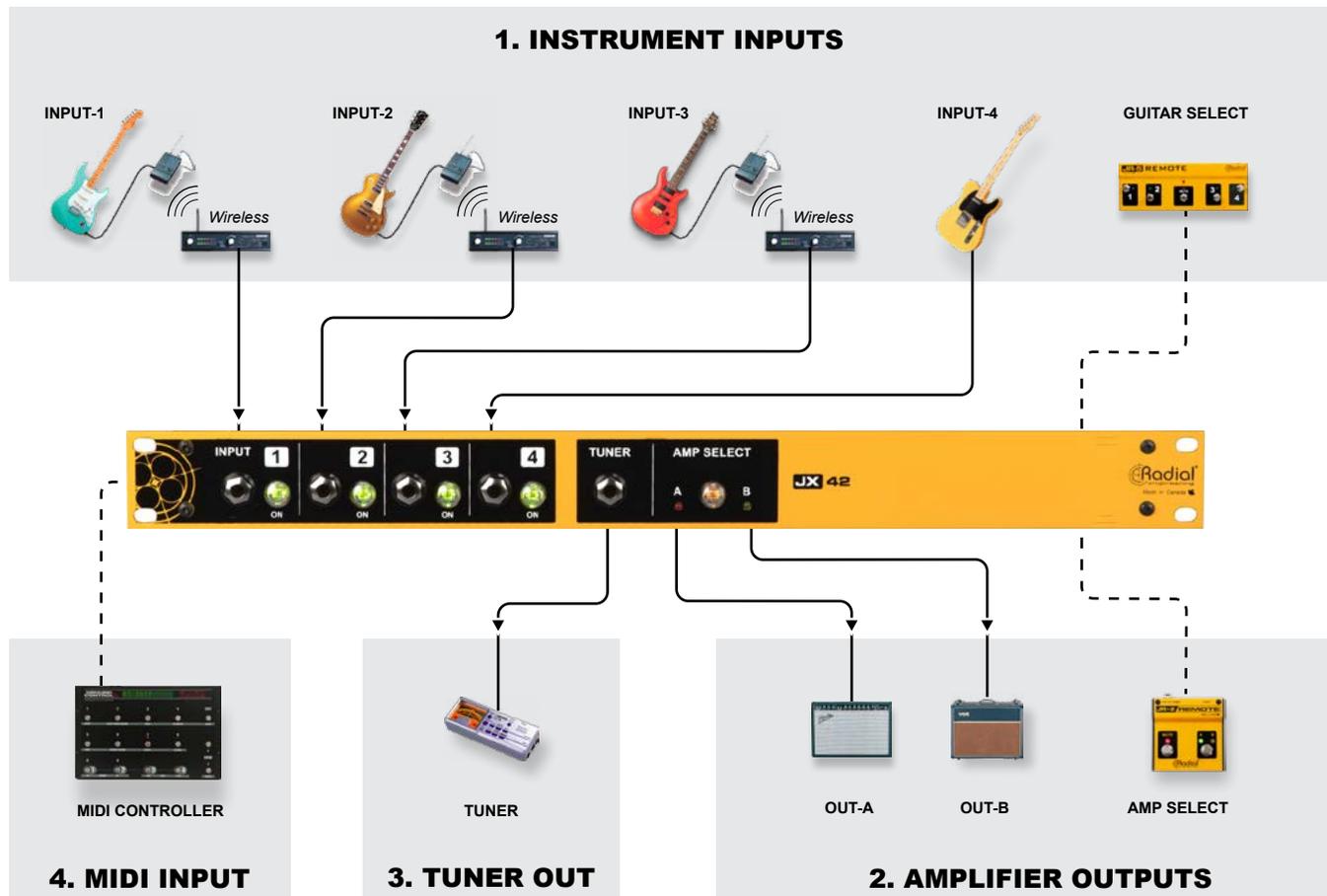# Radial JX44 V2 Owner's Manual

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INTRODUCTION

Thank you for purchasing the JX42 V2, a streamlined guitar and amplifier switcher that allows you to connect up to four instruments and two amps, with the ability to switch inputs and outputs in an instant for seamless transitions during a live performance.

We encourage you to read through this manual to familiarize yourself with the many features available on the JX42 V2, allowing you to get the most out of this powerful switching device. If you have any questions that are not addressed by this user guide, please visit our website at www.radialeng.com for additional resources and frequently asked questions.

OVERVIEW

The JX42 V2 can be simplified by grouping its features into four main sections: the Instrument Inputs, the Amplifier Outputs, the Tuner Outputs, and the MIDI Input.

1. INSTRUMENT INPUTS: The JX42 features four ¼" instrument inputs for wired or wireless guitars. Any combination of these four inputs can be active at the same time, making it easy to switch instruments from one song to the next. Large front-panel switches turn each input on and off, and the input connections are mirrored on the both the front and back of the JX42 for convenience. The optional JR-5 remote footswitch allows hands free operation and includes LED indicators to show which guitars are active.

2. AMPLIFIER OUTPUTS: A selector switch on the front panel of the JX42 silently toggles between two ¼" outputs to feed a pair of amplifiers. This feature can also be accessed remotely using the optional JR-2 footswitch. A pristine Class-A signal path and Jensen transformer isolation on both outputs offer studio quality sound while eliminating hum and buzz caused by ground loops.

3. TUNER OUTPUTS: The JX42 includes tuner outputs on both the front and back panels. All inactive instrument inputs automatically feed the tuner outputs, so a guitar tech can simply grab and tune without disrupting the performance. Both of the tuner outputs can be used simultaneously.

4. MIDI INPUT: Built in MIDI functionality allows you to use third-party MIDI footswitches to control the functions of the JX42 remotely. Instrument on/off controls, amplifier switching, and the ability to have both amplifiers on simultaneously are all available via MIDI commands.
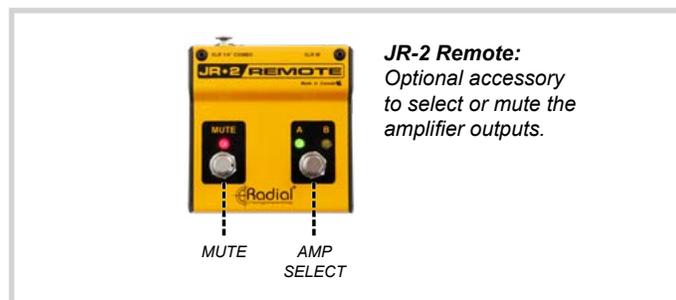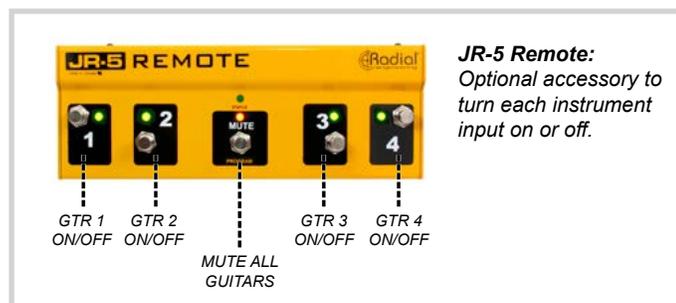
FRONT PANEL FEATURES

1. **INPUTS 1-4:** Buffered gold-contact inputs for unbalanced instruments such as guitars and basses. The front panel jacks take priority over the rear panel instrument inputs .

2. **INPUT ON/OFF:** Large switches with green LED indicators turn each instrument input on/off. Multiple inputs can be on simultaneously.

3. **TUNER OUT:** Buffered unbalanced output to feed a tuner pedal. This output is fed by all inactive instrument inputs, and can be used simultaneously with the rear panel Tuner output.

4. **AMP SELECT:** Illuminated switch toggles between amp outputs A & B. The light for the amp select switch turns off when the Mute function is engaged on the optional JR-2 remote footswitch or via MIDI commands. Each amp output also features a corresponding LED which turns on to indicate which amp output is currently active.

REAR PANEL FEATURES

5. **IEC POWER:** Connection for standard IEC power cable (included). 120V/240V operation for international use.

6. **MIDI IN:** Standard 5-pin MIDI connector allows MIDI controllers to activate the inputs and outputs of the JX42 V2. Eight dip switches configure channel, program, and control changes. Can be used in conjunction with the JR-5 and JR-2 footswitches.

7. **JR-5 REMOTE:** XLR connection for the optional JR-5 remote footswitch, which can control the instrument inputs from a distance.

8. **JR-2 REMOTE:** ¼" TRS input for connection to the optional JR-2 remote footswitch, which can toggle between or mute the amplifier outputs. When a JR-2 remote is connected, the front panel amp select switch on the JX42 will be inactive.

9. **TUNER OUT:** Buffered unbalanced output to feed a separate tuner. This output is fed by all inactive instrument inputs and is always on. Can be used simultaneously with the front panel Tuner output.

10. **OUTPUTS A & B:** Transformer isolated and buffered gold-contact outputs for feeding two stage amplifiers.

11. **LIFT:** Isolates the ground connection on each amplifier output to help eliminate hum and buzz caused by ground loops.

12. **INPUTS 1-4:** Buffered gold-contact connections for unbalanced instruments such as guitars and basses. Wired in parallel with front panel connectors.

GTR 1 ON/OFF *GTR 2 ON/OFF* *MUTE ALL GUITARS* *GTR 3 ON/OFF* *GTR 4 ON/OFF*

JR-5 Remote:
Optional accessory to turn each instrument input on or off.

MUTE *AMP SELECT*

JR-2 Remote:
Optional accessory to select or mute the amplifier outputs.

GETTING STARTED: POWERING THE JX42

The JX42 features a rear-panel IEC input for the included power supply cable. The internal power supply is compatible for use in multiple regions, from 100-240VAC at 50/60Hz. For international touring applications, simply swap out the IEC cable for one that matches the outlet type at your country of destination.

The JX42 has no power on/off switch: once it is connected to a power source, the front panel LED indicators for Input-1 and Output-A will illuminate and the unit will be ready for use.

THE INSTRUMENT INPUTS

The JX42 is equipped with four instrument inputs, accessible via redundant connectors on both the front and rear panels. These inputs employ Radial's proprietary Class-A buffer circuit for superior audio quality and low noise, with gold-contact connectors for optimal signal transfer. If your setup includes wireless guitar systems, connect the outputs of your recievers to the instrument inputs, otherwise you can connect your guitars or basses directly to the JX42. In either case, use standard ¼" unbalanced instrument cables, and keep your cable runs as short as you reasonably can.

The instrument inputs, mirrored on the front and rear panels of the JX42

You can activate any input on the JX42 by pressing the corresponding front-panel ON switch. Each switch is backlit and will illuminate when the input is selected. To deselect any instrument, press the ON switch a second time. The JX42 allows any combination of inputs to be active simultaneously, which can be particularly helpful for guitar techs that need to perform a quick instrument hand-off between songs; by making two instruments active they can let one guitar ring out at the end of the first song, while ensuring the next guitar is ready to play as soon as it reaches the artist's hands.

Note that the front panel inputs have priority over the rear panel connectors - as soon as you plug a cable into one of the front panel input jacks the corresponding input on the rear panel will be deactivated. This allows you to troubleshoot or make changes on the fly without the need to fuss with cables in the back of your equipment rack during a performance.

THE AMPLIFIER OUTPUTS

The A and B outputs on the rear panel of the JX42 are ¼" unbalanced connections that can be used to feed instrument amplifiers, digital amp modelers, or even direct boxes. These outputs are equipped with industry-leading Jensen transformers for exceptional frequency response with minimal signal coloration, while also providing galvanic isolation that eliminates hum and buzz from ground loops. Each output also includes a LIFT switch that can further reduce ground loop noise should you encounter any during setup or soundcheck.
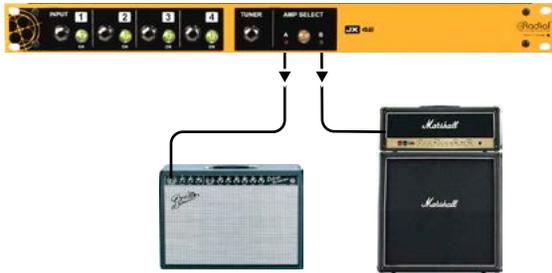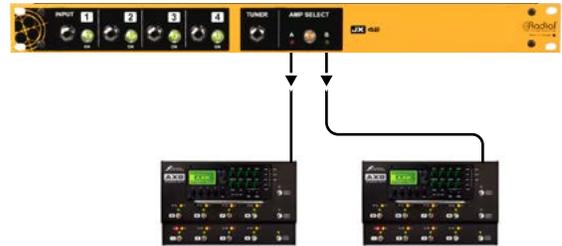

The amp outputs and lift switches

The Amp Select Switch

The Amp Select Switch on the front panel allows you to toggle between the two amplifier outputs without any switchover noise. This feature can be used to switch between two different amps for a wider range of tonal options, or to select between a primary and a backup amplifier to create a redundant system that protects against dropouts should one of your amplifiers fail during a performance. LED indicators on either side of the Amp Select Switch let you know at a glance which amp output is currently active.

Connecting two different amplifiers to the JX42

Connecting redundant amp modelers

Under most conditions, the Amp Select Switch itself will be illuminated, indicating that one of the amp outputs is currently active. However, if you are using the optional JR-2 remote footswitch or an external MIDI controller with the JX42, you can mute both of the amplifier outputs at once. When the amp outputs are muted, the Amp Select Switch will not be illuminated. Please see the JR-2 and MIDI sections of this manual for further details.

THE TUNER OUTPUTS

The JX42 has two tuner outputs, with one on each of the front and rear panels for convenience. These are ¼" unbalanced connections designed to feed tuner pedals or rackmount guitar tuners. Both of these outputs are buffered to remove the tuner from the signal chain and prevent clock noise from bleeding onto the signal path.

The tuner outputs are fed from all inactive instrument inputs. So if you have Input-1 and Input-2 active, then Input-3 and Input-4 will both feed the tuner out. This makes it easy for guitar techs to tune unused instruments at any given time without disrupting the performance.

Both of the tuner outputs can be used simultaneously if needed, and they will always be active, even when remote footswitches or MIDI controllers are used to mute the JX42 amp outputs.

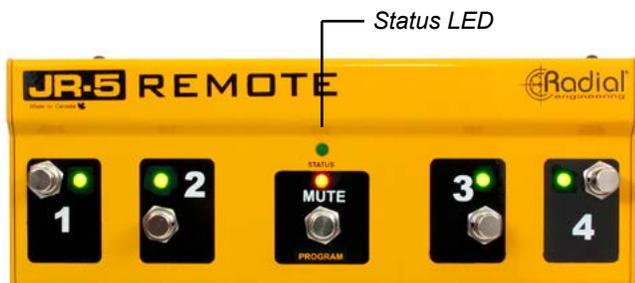*The tuner outputs, mirrored on the front and rear panels of the JX42*

USING THE JR-5 REMOTE FOR GUITARS

The JX42 is compatible with the optional Radial JR-5 Remote, a rugged footswitch that can control the input switching functions from up to 300 feet away. This gives guitar technicians the ability to manage the instrument inputs hands-free, or it can allow the artist to control the JX42 from their pedalboard on stage.

The JX42 remote footswitch inputs

The JR-5 connects to the JX42 using a standard XLR mic cable. No local power supply is required, as the JR-5 receives power automatically from the JX42.

Status LED

The JR-5 Remote Footswitch

The footswitches 1-4 on the JR-5 will perform the same function as the ON switches on the front panel of the JX42, complete with LED indicators to let you know at a glance which instruments are currently active.

When selecting inputs via the JR-5 remote, the LED status indicators on the front panel of the JX42 will also turn on/off to mirror your selections.

In addition to the input selector footswitches, the JR-5 includes a MUTE switch. When pressed, this will temporarily mute all instrument inputs to the JX42. Pressing this switch a second time will revert back to the prior combination of active inputs.

The JR-5 can also be operated in BANK mode, which stores up to four combinations of input on/off settings, eliminating excess toe-tapping during complex performances.

When the JR-5 is operating in BANK mode, the JX42 front panel switches will still function as typical on/off switches for each input. This scenario allows you to recall four banks with the JR-5 footswitch, while using the JX42 front panel controls to temporarily add or subtract instruments.

PROGRAMMING BANKS WITH THE JR-5 FOOTSWITCH

Besides manually controlling the JX42 inputs, the JR5 also has the ability to program and store its own set of four banks. The following steps outline this procedure:

- Hold down the MUTE footswitch for 8 seconds.

- The MUTE LED indicates the bank you are currently programming by the number of blinks. Select the desired combination of guitar inputs using the footswitches 1 thru 4. Hit the MUTE footswitch to write the bank to memory and advance to the next bank.

- Repeat until all four banks are setup and stored. Hold the MUTE footswitch for 3 seconds when finished.

RECALLING BANKS

- Hold the MUTE footswitch for 3 seconds to enter BANK mode. The STATUS LED on the JR-5 will illuminate, indicating BANK mode is active.

- Use the footswitches 1 thru 4 to recall the four banks from the JR-5's internal memory.

- You can exit BANK mode at any time by holding the MUTE footswitch for 3 seconds, until the STATUS LED turns off.

USING THE JR-2 REMOTE FOR AMPS

The JX42 is also compatible with the optional Radial JR-2 remote footswitch, which can be used to control the amplifier outputs from up to 300 feet away.

Connect the JR-2 remote to the rear panel of the JX42 using a balanced ¼" TRS cable. Just like the JR-5, the JR-2 does not require a local power supply as it receives power directly from the JX42.

The JR-2 features an A/B toggle footswitch to switch between the active amp outputs. Use the A/B footswitch the same way you would the front panel Amp Select Switch, pressing it once to switch from one amplifier to another, or to select between your primary and backup amp modelers. When the JR-2 remote is connected to the JX42, the front panel Amp Select Switch will be disabled, making the footswitch the only way to toggle between the two amplifier outputs.
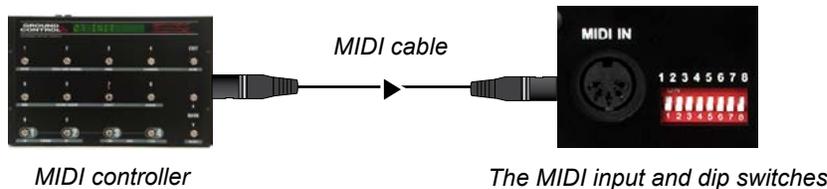
The MUTE switch on the JR-2 allows you to access a feature that is not present on the JX42 itself, which is the ability to mute both amp outputs. When this footswitch is pressed on the JR-2, the red MUTE LED indicator will illuminate, and the LED behind the Amp Select Switch on the JX42 will turn off to indicate that the outputs are muted.

The Radial JR-2 Footswitch

Note: When the JR-2 remote footswitch is connected to the JX42, it will disable the front panel Amp Select Switch as well as the ability to switch or mute amplifiers via MIDI commands. This is to prevent the LED indicators on the JR-2 from falsely indicating the status of the amp outputs.

THE MIDI INPUT

The JX42 features built-in MIDI compatibility for use with MIDI footswitches and controllers. This allows you to remotely control the instrument inputs and the amplifier outputs from a single device. To use these devices with the JX42, connect their MIDI output to the rear panel MIDI IN of the JX42 using a standard 5-pin MIDI cable.

MIDI cable

MIDI controller

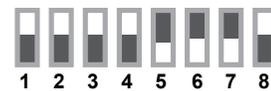*The MIDI input and dip switches*

MIDI CONFIGURATION

The JX44's MIDI channel selection and configuration is set via the 8 DIP switches on the rear panel. It can be set up to respond to an individual MIDI channel (1-16), or put into OMNI mode to respond to messages sent on all MIDI channels simultaneously. The DIP switches also determine whether the JX42 responds to MIDI Program Change or Control Change messages. DIP switch details can be found on the following pages.

THE DEFAULT FACTORY DIP SWITCH SETTINGS

The JX42 ships with Dip switches 1-4: DOWN, 5-7: UP, and 8: DOWN. This configuration means the JX42 will respond to MIDI messages on all MIDI Channels, and the JX42 will respond to Control Change messages only.

The default MIDI dip switch settings

DIP switches 1-4:

These four switches select which MIDI channel (1-16) the JX42 will respond to. The guide below shows which position each switch should be in for each corresponding channel.
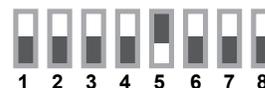
DIP SWITCH #	1	2	3	4
Midi Ch 1	UP	UP	UP	UP
Midi Ch 2	DOWN	UP	UP	UP
Midi Ch 3	UP	DOWN	UP	UP
Midi Ch 4	UP	UP	DOWN	UP
Midi Ch 5	UP	UP	UP	DOWN
Midi Ch 6	UP	DOWN	UP	DOWN
Midi Ch 7	DOWN	UP	DOWN	UP
Midi Ch 8	DOWN	DOWN	UP	UP
Midi Ch 9	UP	UP	DOWN	DOWN
Midi Ch 10	UP	DOWN	DOWN	UP
Midi Ch 11	DOWN	UP	UP	DOWN
Midi Ch 12	DOWN	DOWN	UP	DOWN
Midi Ch 13	DOWN	UP	DOWN	DOWN
Midi Ch 14	UP	DOWN	DOWN	DOWN
Midi Ch 15	DOWN	DOWN	DOWN	UP
Midi Ch 16	DOWN	DOWN	DOWN	DOWN

DIP switch 5:

This switch is used to select OMNI mode. OMNI Mode allows the JX42 to respond to Control and Program changes on any MIDI channel (1-16). Setting the JX42 to a specific channel is particularly useful when linking multiple MIDI devices as they can all be set to only respond to changes on their assigned channel.

Some MIDI equipment will default to OMNI mode when first switched on, so it is important to check configurations upon power-up and re-select the channel on your device if necessary.

When in the DOWN position, OMNI mode is OFF and the JX42 will only respond to MIDI messages on the channel selected with switches 1-4. When in the UP position, OMNI mode is ON and the JX42 will respond to MIDI messages sent on all MIDI channels.

Select OMNI mode by setting DIP switch #5 in the UP position

DIP switches 6-7:

The JX42 features can be activated using MIDI Control Changes, Program Changes, or both. Switches 6 and 7 select how the JX42 will respond to these messages. At least one of these switches needs to be in the UP position for the JX42 to respond to MIDI commands.

DIP #	6	7
Enable Program Changes	DOWN	UP
Enable Control Changes	UP	DOWN
Enable Program Changes and Control Changes	UP	UP

DIP switch 8:

No current function

MIDI IMPLEMENTATION CHART

The JX42 is setup to respond to both MIDI Control changes and Program changes. Control changes can select both guitars and amplifiers on the JX42, while Program changes are reserved for amplifier selection only. The following chart shows which instruments and amplifiers will be activated when the JX42 receives the various Control and Program changes sent by your MIDI pedalboard or sequencer:

	GUITAR 1	GUITAR 2	GUITAR 3	GUITAR 4	Amp Out A	Amp Out B
CC 88 (off 0-63/on 64-127)	ON					
CC 89		ON				
CC 90			ON			
CC 91				ON		
CC 92					ON	OFF
CC 93					OFF	ON
Program C1 (Amp A On)					ON	OFF
Program C2 (Amp B On)					OFF	ON
Program C17 (Mute)					ALL MUTE ON	
Program C18 (unmute)					ALL MUTE OFF	

Reminder: when using the JR-2 remote with the JX42, amplifier switching and muting via MIDI is disabled

JX42 V2 SPECIFICATIONS*

ANY INSTRUMENT INPUT TO ANY AMP OUTPUT

Frequency Response: ....20Hz-20kHz +/-0.2dB, 10Hz-100kHz +/-1dB (0dBv)
Gain: ....+/-0.3dB
Maximum Input: ....+18dBu (Output 1% THD @ 1kHz), +17dBu (Output 0.1% THD @ 1kHz)
Total Harmonic Distortion + Noise: ....0.001%, -100dB (@ 1kHz, 0dBu)
Total Harmonic Distortion: ....0.0006%, -105dB (@ 1kHz, 0dBu
Signal to Noise Ratio: ....-102dB (referenced to 0dBu), -118dB (referenced to +18dBu)

GENERAL

Conditions:...For use in dry locations only between 5°C and 40°C
Power: ....100V to 240V, 50/60Hz with IEC connection
Conformity: ....CE, FCC
Warranty: ....Radial 3-year, transferable

*Specifications are subject to change without notice.

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To meet the requirements of California Proposition 65, it is our responsibility to inform you of the following:
WARNING: This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.
Please take proper care when handling and consult local government regulations before discarding.

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