



TI2082

Revised 10-93

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## EASTMAN EXR 500T Film 5298

### 1) Description

EASTMAN EXR 500T Film 5298 (35 mm) is a high-speed tungsten-balanced color negative camera film with microfine grain, very high sharpness, and high resolving power. It features wide under and over exposure latitude, with whiter whites, and accurate color and flesh-to-neutral reproduction. Enhanced shadow detail provides crisper, richer blacks. It also offers improved shadow detail and blacks in telecine transfers. This film reproduces a wide range of colors for increased performance in special-effects applications.

### 2) Base

EASTMAN EXR 500T Film 5298 has an acetate safety base with rem-jet backing.

### 3) Darkroom Recommendations

Do not use a safelight. Handle unprocessed film in total darkness.

### 4) Storage

Store unexposed film at 13°C (55°F) or lower. For extended storage, store at -18°C (0°F) or lower. Process exposed film promptly. Store processed film according to the recommendations in NAPM IT9.11-1992: for medium-term storage (minimum of ten years), store at 10°C (50°F) or lower at a relative humidity of 20 to 30 percent; for extended-term storage (for preservation of material having permanent value), store at 2°C (35°F) or lower at a relative humidity of 20 to 30 percent. For active use, store at 25°C (77°F) or lower, at a relative humidity of 50 +/- 5 percent. This relates to optimized film handling rather than preservation; static, dust-attraction and curl-related problems are generally minimized at the higher relative humidity. After usage, the film should be returned to the appropriate medium- or long-term storage conditions as soon as possible.

For more information about medium- and long-term storage, see NAPM IT9.11-1992, and KODAK Publications No. H-1, EASTMAN Professional Motion Picture Films (1992 Edition) and No. H-23, The Book of Film Care (1992 Edition).

### 5) Exposure Indexes

Tungsten (3200K) - 500/28 Daylight<sup>1</sup> - 320/26

Use these indexes with incident- or reflected-light exposure meters and cameras marked for ISO or ASA speeds or exposure indexes. These indexes apply for meter readings of average subjects made from the camera position or for readings made from a gray card of 18-percent reflectance (such as one of the KODAK Gray Cards, KODAK Publication No. R-27) held close to and in front of the subject. For unusually light- or dark-colored subjects, decrease or increase the exposure indicated by the meter accordingly.

<sup>1</sup>With a KODAK WRATTEN Gelatin Filter No. 85.

## 6) Color Balance

This film is balanced for exposure with tungsten illumination (3200K). You can also expose it with tungsten lamps that have slightly higher or lower color temperatures (+/- 150K) without correction filters, since final color balancing can be done in printing. For other light sources, use the correction filters in the table below.

Light Source	KODAK Filters on Camera <sup>1</sup>	Exposure Index/DIN
Tungsten (3000 K)	WRATTEN Gelatin No. 82B	320/26
Tungsten (3200 K)	None	500/28
Tungsten photoflood(3400 K)	None	500/28
Daylight (5500 K)	WRATTEN Gelatin No. 85	320/26
White-Flame Arcs	WRATTEN Gelatin No. 85B	200/24
Yellow-Flame Arcs	Color Compensating 20Y	320/26
Optima 32	None	500/28
Vitalite	WRATTEN Gelatin No. 85	320/26
Fluorescent, Cool White <sup>2</sup>	WRATTEN Gelatin No. 85 + 10M	200/24
Fluorescent, Deluxe Cool White <sup>2</sup>	WRATTEN Gelatin No. 85C + 10R	320/26
Metal Halide	WRATTEN Gelatin No. 85	320/26

<sup>1</sup> These are approximate corrections only. Make final corrections during printing.

<sup>2</sup> These are starting-point recommendations for trial exposures. If the kind of lamp is unknown, a KODAK Color Compensating Filter CC 40R can be used with an exposure index (EI) of 250/25.

**NOTE:** Consult the manufacturer of high-intensity ultraviolet lamps for safety information on ultraviolet radiation and ozone generation.

## 7) Exposure Table-Tungsten Light

At 24 frames per second (fps), 170-degree shutter opening:

Lens Aperture	f/1.4	f/2	f/2.8	f/4	f/5.6	f/8	f/11	f/16
Footcandles Required	5	10	20	40	80	160	320	640

Use this table for average subjects that contain a combination of light, medium, and dark colors. When a subject includes only pastels, use at least 1/2 stop less exposure; dark colors require 1/2 stop more exposure.

**Lighting Contrast -**

The recommended ratio of key-light-plus-fill-light to fill light is 2:1 or 3:1. However, you may use 4:1 or greater when a particular look is desired.

## 8) Reciprocity Characteristics

You do not need to make any filter corrections or exposure adjustments for exposure times from 1/1000 to 1 second.

## 9) Processing

Most commercial motion-picture laboratories provide a processing service for this film. There are no packaged chemicals available for preparing the processing solutions. See KODAK Publication No. H-24.07, Manual for Processing EASTMAN Color Films, Process ECN-2 Specifications, Module 7, for more information on the solution formulas and the procedure for machine processing these films. Normal processing is recommended for all exposure levels of this film.

## 10) Identification

After processing, the product code number 5298 (35 mm) emulsion and roll number identification, KEYKODE number, and internal product symbol (T) are visible along the length of the film.

## 11) Laboratory Aim Density (LAD)

To maintain optimum quality and consistency in the final prints, the laboratory must carefully control the color timing, printing, and duplicating procedures. To aid in color timing and curve placement, negative originals should be timed relative to Laboratory Aim Density (LAD) Control Film supplied by Eastman Kodak Company.<sup>2</sup> The LAD Control Film provides both objective sensitometric control and subjective verification of the duplicating procedures used by the laboratory.

In the LAD Control Method,<sup>3</sup> the electronic color analyzer used for color timing is set-up with the LAD Control Film to produce a gray video display of the LAD patch, corresponding to 1.0 neutral density (gray) on the print. The negative printing original is then scene-to-scene timed. There are specific LAD values for each type of print or duplicating film that the original can be printed on. For print films, the LAD patch is printed to a neutral gray of 1.0 visual density. For duplicating films, the specified aims are at the center of the usable straight-line portion of the sensitometric curve of the film.

## 12) Film-To-Video Transfers

When you transfer the film directly to video, you can set up the telecine using the negative Telecine Analysis Film (TAF) supplied by EASTMAN Kodak Company. The TAF consists of a neutral density scale and an eight-bar color test pattern with a LAD gray surround.

The TAF gray scale provides the telecine operator (colorist) with an effective way to adjust subcarrier balance and to center the telecine controls before timing and transferring a film. The TAF color bars provide the utility of electronic color bars, even though they do not precisely match the electronically generated color bars. Using the TAF will help obtain optimum quality and consistency in the film-to-video transfer. For more information regarding TAF, see KODAK Publication No. H-9, TAF User's Guide.

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<sup>2</sup>Direct any inquiries to one of the regional sales offices.

<sup>3</sup>Use of the LAD Control Method is described in the paper, "A Simplified Motion-Picture Laboratory Control Method for Improved Color Duplication," by John P. Pytlak and Alfred W. Fleischer in the October 1976 SMPTE Journal.

### 13) Image Structure

The modulation-transfer curves, the diffuse rms granularity, and the resolving-power data were generated from samples of 5298 Film exposed with tungsten light and processed as recommended in Process ECN-2 chemicals. For more information on image-structure characteristics, see KODAK Publication No. H-1, EASTMAN Professional Motion Picture Films.

**rms Granularity -**

Refer to curve.

Read with a microdensitometer, (red, green, blue) using a 48-micrometre aperture.

**Resolving Power -**

ISO RPL	50 lines/mm	(TOC 1.6:1)
ISO RP	100 lines/mm	(TOC 1000:1)

Determined according to a method similar to the one described in ISO 6328-1982, Photography—Photographic Materials—Determination of ISO Resolving Power.

### 14) Available Roll Lengths

For information on film roll lengths, check Kodak's Motion Picture Films for Professional Use price catalog or see a Kodak sales representative in your country.

### 15) Graphs<sup>4</sup>

**MTF**

a) (9-93)

**NOTE:** These photographic modulation-transfer values were determined by using a method similar to the one described in ANSI Standard PH2.39-1977(R1984). The film was exposed with the specified illuminant to spatially varying sinusoidal test patterns having an aerial image modulation of a nominal 60 percent at the image plane, with processing as indicated. In most cases, the photographic modulation-transfer values are influenced by development-adjacency effects and are not equivalent to the true optical modulation-transfer curve of the emulsion layer in the particular photographic product.

**Characteristic**

b) (9-93)

**Spectral Sensitivity**

c) (9-93)

**Spectral Dye Density**

d) (9-93)

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<sup>4</sup>NOTICE: While the data presented are typical of production coatings, they do not represent standards that must be met by Kodak. Varying storage, exposure, and processing conditions will affect results. The company reserves the right to change and improve product characteristics at any time.

**Granularity**

e) (9-93)

**NOTE:** The Kodak materials described in this publication for use with EASTMAN EXR 500T Film 5298 are available from dealers who supply Kodak products. You can use other materials, but you may not obtain similar results.

The contents of this publication are subject to change without notice.

**Kodak, Eastman, 5298, Keycode, EXR and Wratten are trademarks.**

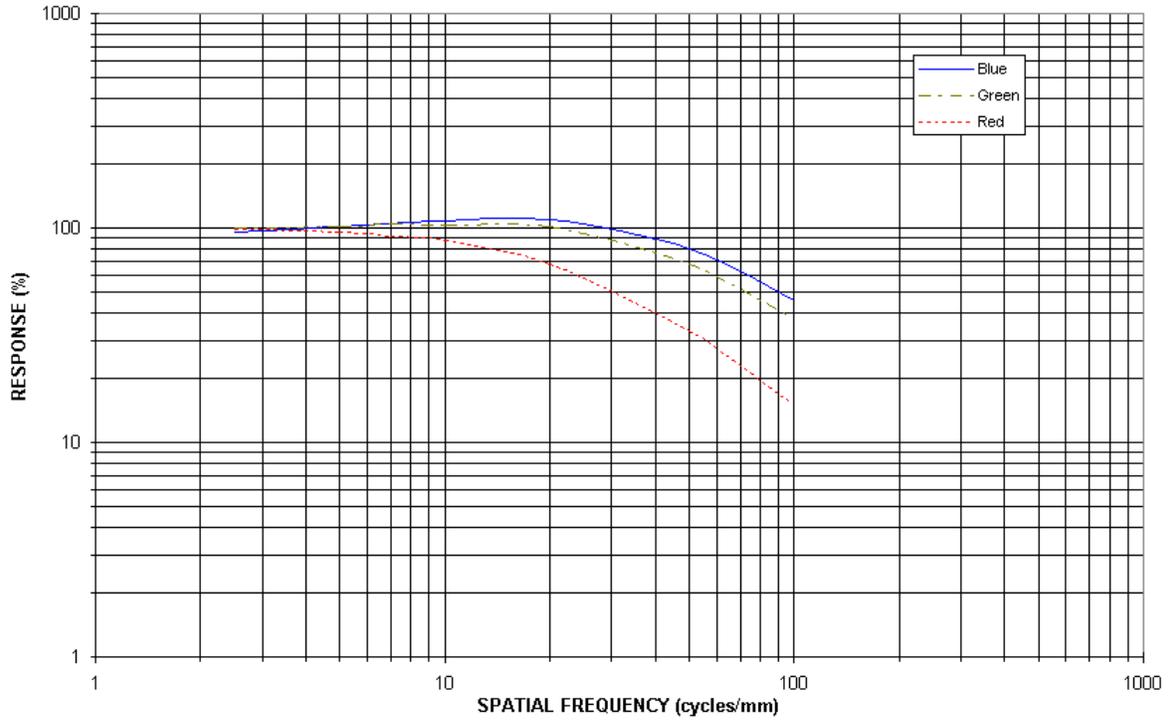
Professional Motion Imaging  
EASTMAN KODAK COMPANY - Rochester, NY 14650

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**End of Data Sheet**

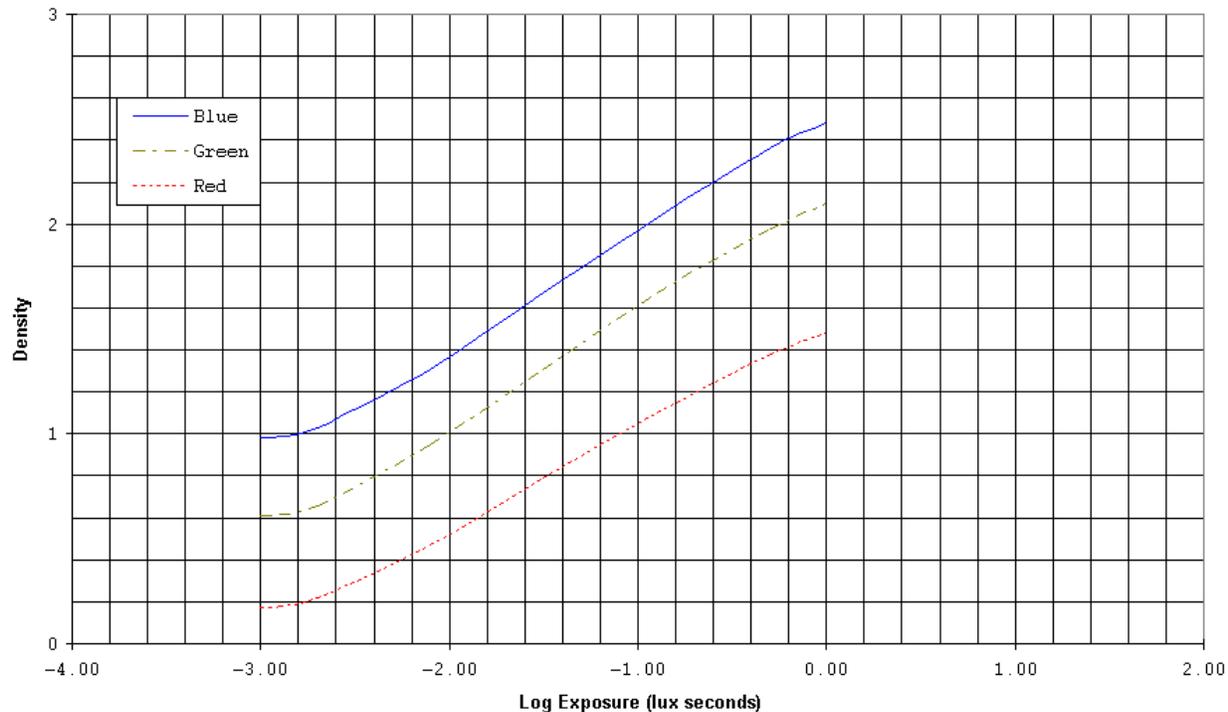
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TI2082A 9-93  
MTF, For Publication  
EASTMAN EXR 500T Film 5298, 7298  
Tungsten 3200 K; Process ECN-2; Status M



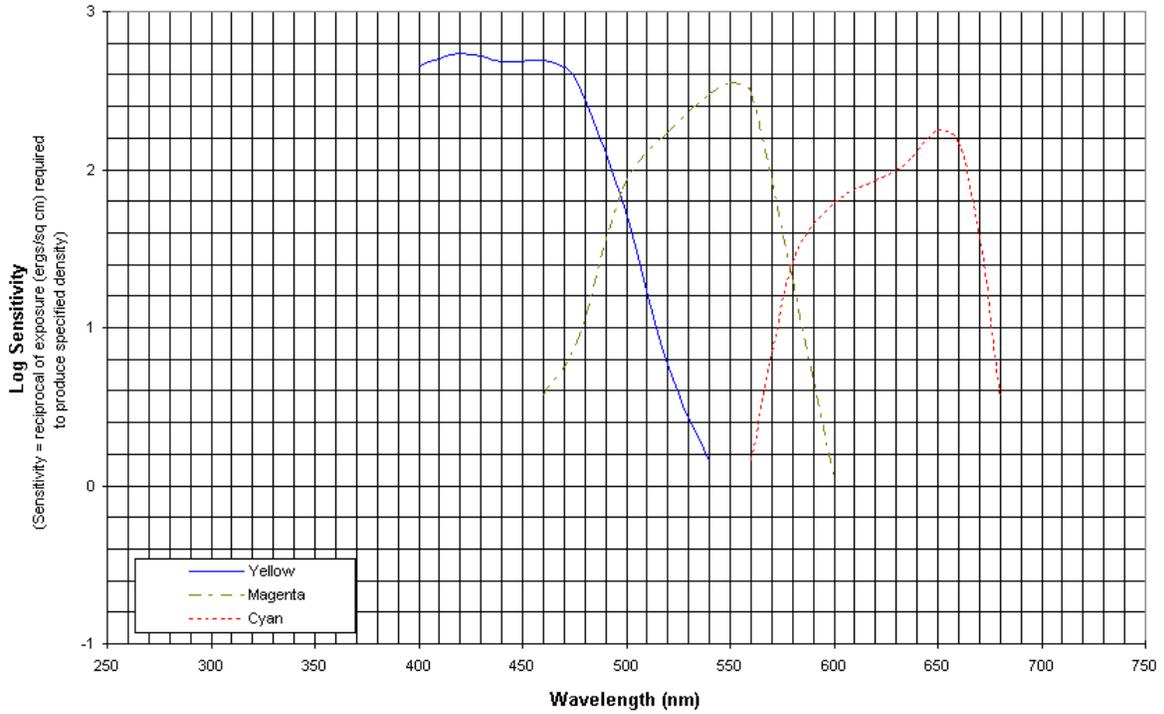
Notice: While the data presented are typical of production coatings, they do not represent standards which must be met by Eastman Kodak Company. Varying storage, exposure, and processing conditions will affect results. The company reserves the right to change and improve the product characteristics at any time.

**TI2082B 9-93**  
CHARACTERISTIC, For Publication  
EASTMAN EXR 500T Film 5298, 7298  
Tungsten 1/50 sec; Process ECN-2; Status M



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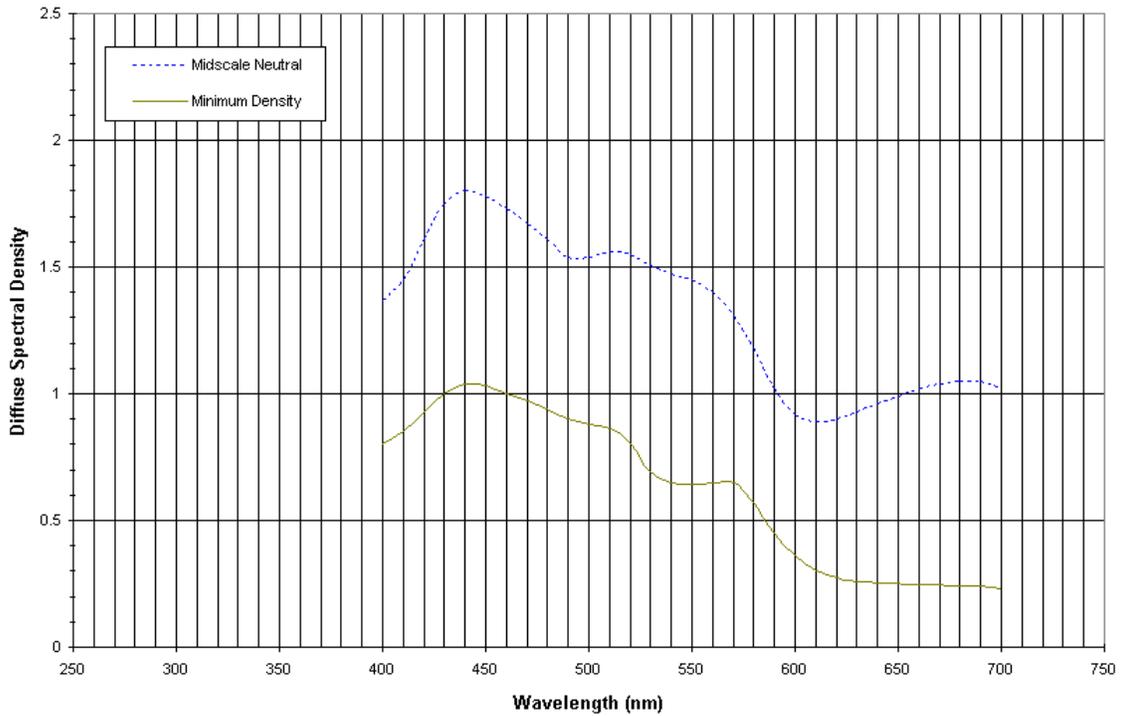
TI2082C 9-93  
SPECTRAL SENSITIVITY, For Publication  
EASTMAN EXR 500T Film 5298, 7298  
Effective exp .013 sec; Process ECN-2;  
Status M; D=0.4>D-min



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**TI2082D 9-93**  
SPECTRAL DYE DENSITY, For Publication

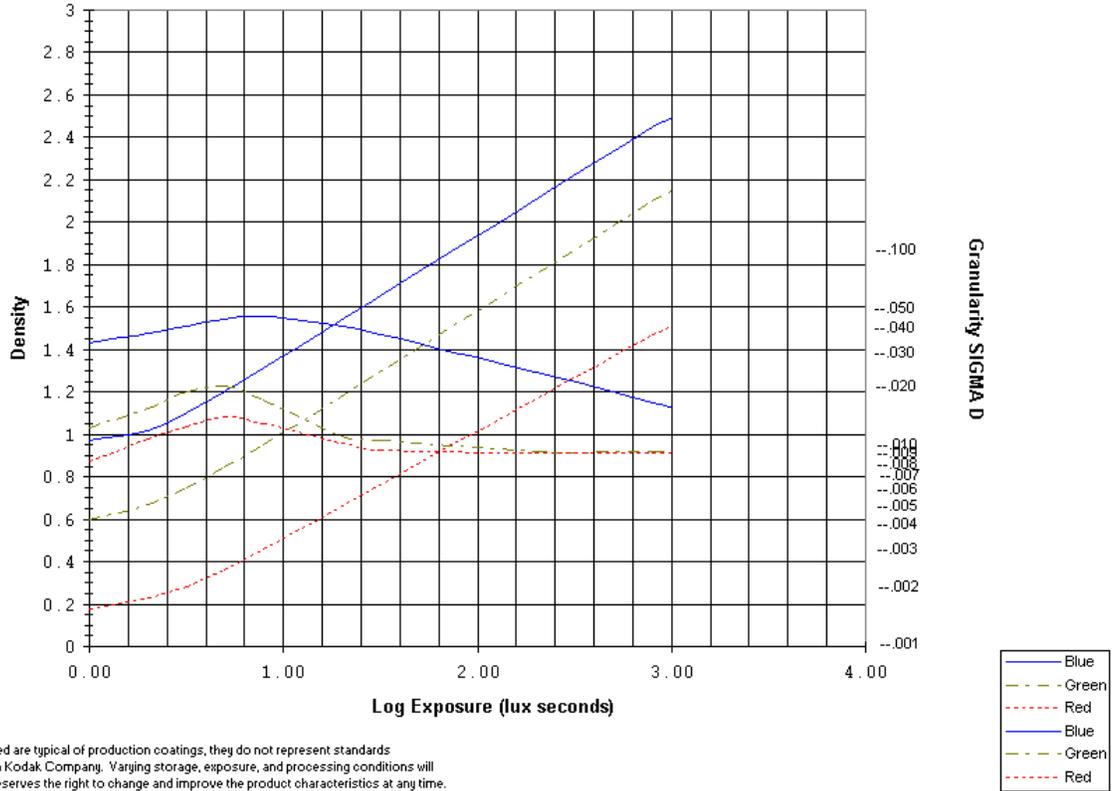
EASTMAN EXR 500T Film 5298, 7298  
Process ECN-2;  
Typical densities for a midscale neutral subject and D-min



Notice: While the data presented are typical of production coatings, they do not represent standards which must be met by Eastman Kodak Company. Varying storage, exposure and processing conditions will affect results. The company reserves the right to change and improve product characteristics at any time.

**TI2082E 9-93**  
 DIFFUSE rms GRANULARITY, For Publication

EASTMAN EXR 500T Film 5298, 7298  
 Granularity vs. Density  
 Process ECN-2



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