

Formaldehyde

*Are You Prepared for the
Next "News" Release*



- Why the Increase in Awareness?
- Methods and Comparisons
- Proper Use for the Application
- Building the Business Now
- Striking While the Iron is Hot

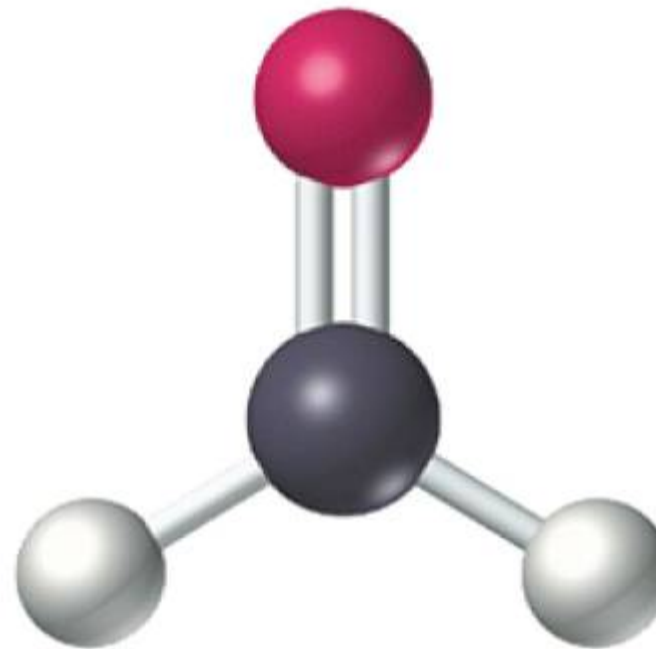
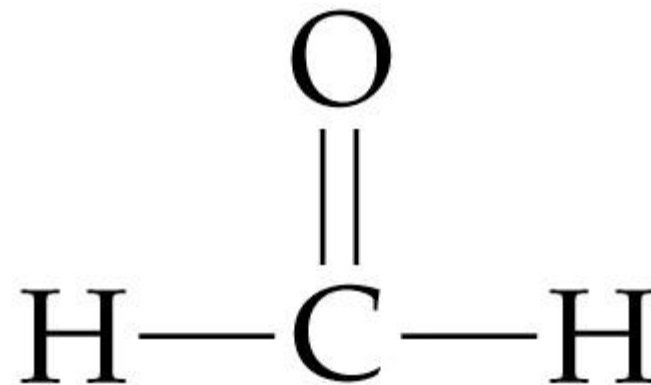
Formaldehyde and IAQ

Why the Increase in Awareness?

Formaldehyde is quickly becoming the new Buzzword for residential IAQ.

What is Formaldehyde?

- Colorless gas
- Simplest C, H, O molecule; MW 30
- Highly reactive molecule; very versatile for formation of resins (e.g., phenol-formaldehyde)
- Very Volatile Organic Compound (VVOC) though is commonly lumped with VOCs
- Odor threshold of 0.8 ppm (800 ng/L)



Formaldehyde Then

- Questions regarding carcinogenicity began in **1980**; phenol – formaldehyde resins began being phased out (insulation; building materials)
- In the '**90s**, formaldehyde became more of an outdoor issue and fell off the radar indoors because of decreased use of materials containing formaldehyde
- In **2004**, it became an indoor issue again, because of new research regarding being a human carcinogen
- New guidelines began appearing and in **2011** the National Toxicology Program (a program of DHHS) named Formaldehyde as a KNOWN Human carcinogen.

WEYERHAEUSER ISSUES STATEMENT REGARDING TJI® JOISTS WITH FLAK JACKET® PROTECTION

Jul 18, 2017

SEATTLE, July 18, 2017 /PRNewswire/ -- Weyerhaeuser Company (NYSE: WY) today announced to address concerns regarding its TJI® Joists with Flak Jacket® Protection product.

The company has determined that recent customer feedback regarding an odor in newly constructed homes is related to a recent fire event that included formaldehyde.

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CBS News / CBS Evening News / CBS This Morning / 48 Hours / 60 Minutes / Sunday Morning



60 MINUTES

EPISODES OVERTIME TOPICS THE TEAM

LUMBER LIQUIDATORS

60 Minutes found that Lumber Liquidators' Chinese-made laminate flooring contains amounts of toxic formaldehyde that may not meet health and safety standards

2015
AUG 16

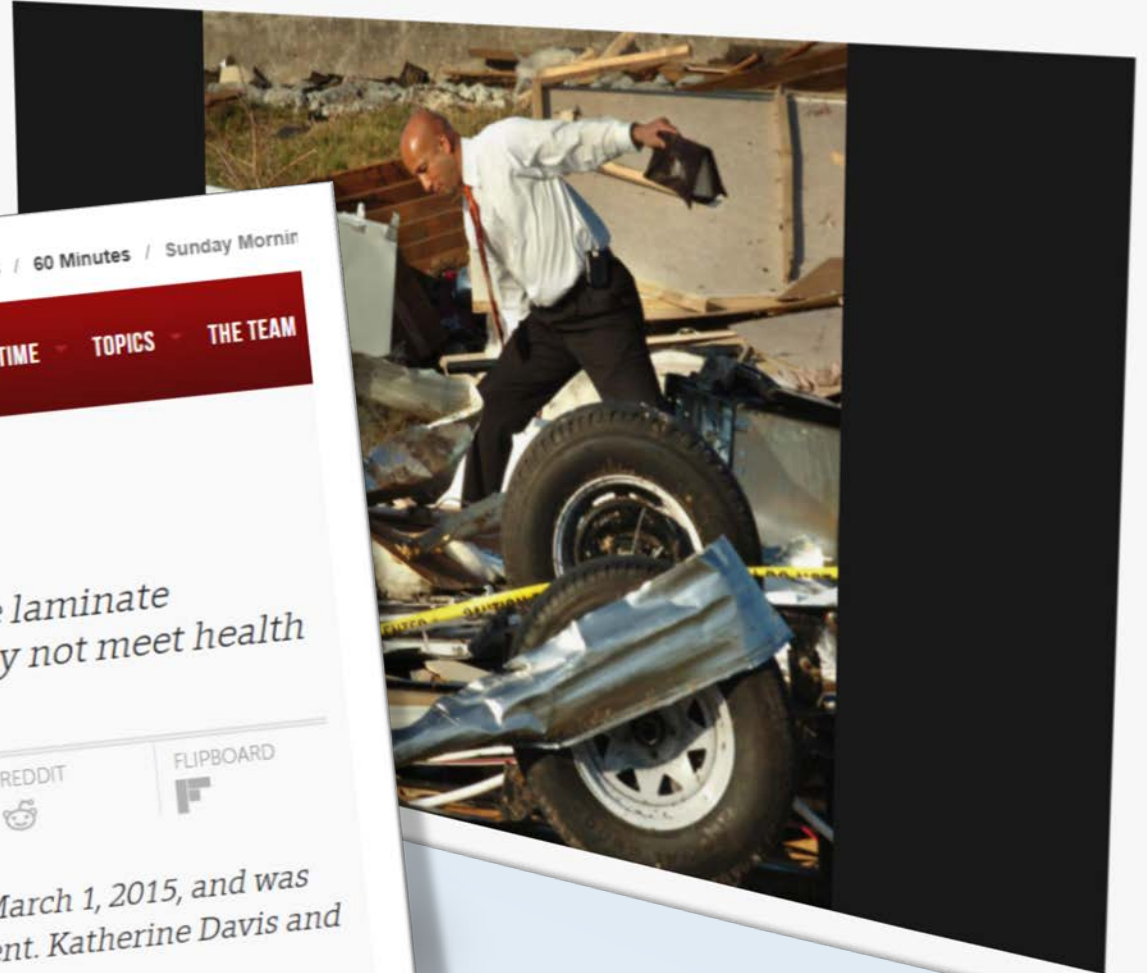
CORRESPONDENT
ANDERSON COOPER



The following is a script from "Lumber Liquidators" which aired on March 1, 2015, and was rebroadcast on August 16, 2015. Anderson Cooper is the correspondent. Katherine Davis and
America with over

Hurricane Katrina survivors win court battle on regulating formaldehyde

BY STEVE HARDY | SHARDY@THEADVOCATE.COM FEB 16, 2018 - 3:33 PM (0)



Even without major news productions and large scale investigations – Awareness is spreading

Update: National Gypsum pro 60 times more formaldehyde DEQ records indicate

Local DEQ representatives and spokespeople for
number, one that's misleading and inaccurate

By Benjamin Schachtman - February 20, 2018



National Gypsum is considering re-opening
pollution concerns, but it is citing misleading a
BENJAMIN SCHACHTMAN)



New clothing can have lice or skin-irritating chemicals

One of these chemicals happens to be **formaldehyde resins** - commonly
used in clothing to prevent mildew and keep garments wrinkle-free.

But aside from less ironing time, clothes with formaldehyde in the fab
cause severe reactions such as eczema when placed on the skin
Especially when the formaldehyde exceeds allowable levels of the
National Gypsum is considering re-opening
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BENJAMIN SCHACHTMAN)

the **Wall Street Journal**, who studied a 2010 st
tability Office, this excess formalde
um. According to Dylan Lee, spokesman for the city, "The
strict regulations

American Chemical Society » News » Press Pacs » 2017 » Exposure to toxins in e-cig vapor varies depending on scenario

FOR IMMEDIATE RELEASE

Weekly PressPac: Wed Aug 02 09:51:32 EDT 2017

Exposure to toxins in e-cig vapor varies scenario

of Toxic
Impacts"

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A study has found that toxins in e-cig
vapor can exceed set limits, but
secondhand exposure under certain
circumstances is likely to cause less harm
than breathing in others' cigarette smoke.
Credit: Oleg Gawriloff/Shutterstock.com

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to the eyes, skin and
human carcinogen; and
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11:25 a.m. – Wilmington City Council has postponed
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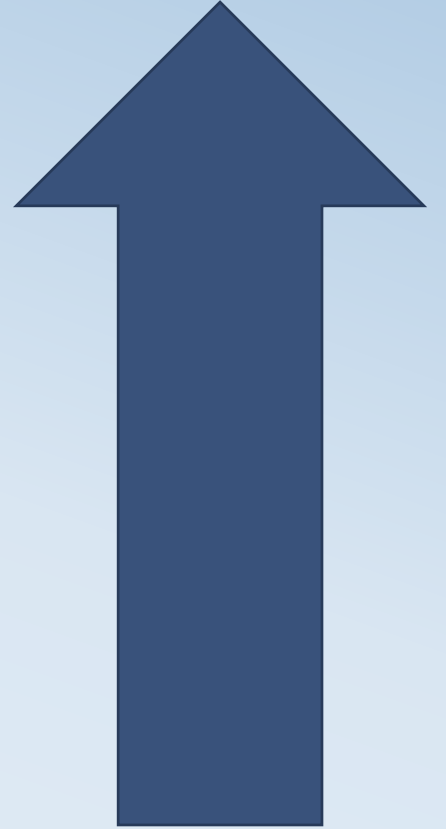
Why Formaldehyde Now?

Synthetic materials

Amount of time spent indoors

Increase in respiratory conditions

Energy efficient building construction



- Naturally Occurring in Wood
- New Construction
- Products containing OSB or other laminates/glues containing formaldehyde
- Glues and Adhesives
- Combustion By-Product
- Insulation
- Personal Care Products and Cosmetics



Sources of Formaldehyde

Methods and Comparisons

Understanding the tools available

Comparisons

Laboratory Sampling Media

- Media and Storage
- Expiration & Shelf Life
- Cost

Analytical Methods

- Method
- Sample Size and Hold Times
- Special Handling

Instant Read Media/Monitors

- Colorimetric
- Environmental Professional Monitors
- Smart Home Monitors

Media	Shelf Life/Expiry	Special Handling	Approx. Cost
Badge	12 Months	Chilled storage	\$15-20
Sorbent Tube	★ 2 Years	Chilled storage	\$5-12
PVC Filter	12 Months	None	\$85 case, <\$1 slides
Impinger	★ < 7 Days	Glass Caution, solvent handling	★ \$100+
Thermal Desorption Tube	12 Months	Glass Caution	★ \$5
XAD-2	30 Days	Glass Caution	\$5

Media Types – Laboratory Analysis

Media	Method	Sampling Rate/Size	Hold Time	Special Shipping
DNPH Badge	EPA TO-11A	Uptake variable 15 min, 24 hrs, 7 days	21 Days	Overnight chilled
DNPH Tube	NIOSH 2016	0.03-1.5 L/min 1-15L	34 Days	Overnight chilled, Glass Caution
PVC Filter	EPA 5700	2 L/min 240-1050L	21 Days	Overnight chilled
Impinger	NIOSH 3501	0.2-1 L/min 1-100L	30 Days	Sample Transfer before shipping
Thermal Desorption Tube	Hantsch	0.2 L/min 4-6L	30 Days	Glass Caution
XAD-2	NIOSH 2541	0.01-0.1 L/min 1-36L	21 Days	Glass Caution



Method Types – Laboratory Analysis Continued

Media	Sensitivity	Cost	Shelf Life/Calibration
Colorimetric Sensor	20-1000 ppb	\$10-\$1500 + \$200 for each replacement filter	1 yr
Environmental Consultant Monitor	0-5 ppm Some up to 30 & 100 ppm	\$300-1400	1-2 yrs
Smart Home Monitor	0-5 ppm	\$15-400	< 1 yr



Media Types – Instant Read Media/Monitors

Proper Use for the Application

Which for Which?

- Location Type
 - Residential
 - Commercial
 - Industrial
- Time Constraints
 - Media Availability
 - Site Accessibility
- Detection Limit Needed
- Regulatory Requirements

Which Method Is Best....For this project??



Example A

Client:

Residential customer
looking to buy used home.

Time Constraints:

3 Days left of inspection
period.

Time crunched and in high
demand Realtor =

Only getting in the home
once and not for a moment
more than required.



Client:

Recently remodeled strip mall owner. Multiple Tenant complaints.

Time Constraints:

None – all are willing parties to find the culprit/source.

Example B

Building the Business Now

Become the “Go To” for Formaldehyde Questions



Optimizing Current Tools

- Do you mention Formaldehyde... *anywhere?*
 - Even if you do not test for it currently, it is a concern for Indoor Air Quality.
 - Consider a page to itself, doesn't need to be in menu but must be able to get to it.
- FAQs
 - Great place to insert extra IAQ terms that can be picked up by Search Engines
- Contact Us Form
 - Are you using this tool to prompt your new product offerings?
- Social Media
 - Easy way to link back to content on your website.
 - Society is looking, are you in their "Following" list?



Add On Tools

- Blogging
 - Large and long term task
 - Helps build credibility as the Go To for topics discussed
- Newsletters (print or email)
 - Less frequent than blogging
 - Life Time Value Builder, tap in to your customer base. IAQ is not a once and done concern.
- Video
 - A short and sweet 30-60 second sales tool
 - Does not have to be fancy to be effective
- Fact Sheet/Sell Sheet
 - Did you know?
 - Provide email to receive your free
Formaldehyde Sources Guide



MEASURE
SUCCESS

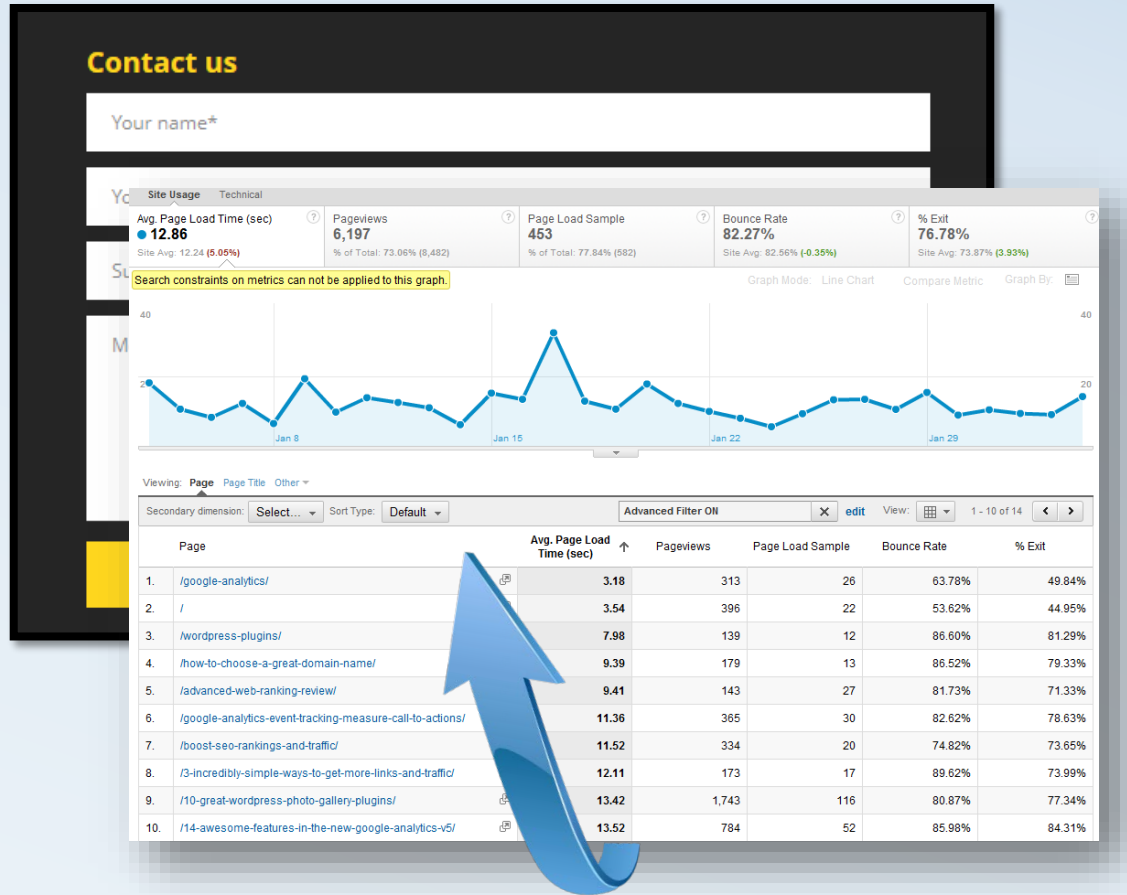
Key Results Area:

strategic factor either internal to the organization or external, *where strong positive results must be realized* for the organization to achieve its strategic goal(s), and therefore, *move toward realizing the organization's longer term vision of success.*

Key Performance Indicator:

a *measurable value* that demonstrates *how effectively* a company is *achieving* key business *objectives.*

Metric and Validate Success



Website Changes

- Page Visits to New Pages
- Blog Page Visits
- Contact Us Forms Showing Interest?

Metric and Validate Success

Social Network		Visits	% Visits
1.	Twitter	27,839	43.17%
2.	Facebook	20,330	31.53%
3.	reddit	4,723	7.32%
4.	LinkedIn	3,512	5.45%
5.	Google+	1,817	2.82%
6.	StumbleUpon	1,394	2.16%
7.	Pocket	1,113	1.73%
8.	Hacker News	810	1.26%

Social Media

- Facebook
- Twitter
- Instagram
- YouTube
- LinkedIn



A word cloud on a dark blue background featuring various terms related to software updates and modifications. The words are arranged in a dense, overlapping cluster. The colors of the words include shades of green, purple, blue, and white. The words are of different sizes, with 'ADJUST' and 'REVAMP' being among the largest. The words include:

- change
- pull
- re-work
- Tweak
- adapt
- Sharpen
- MODIFY
- POLISH
- Correct
- Revamp
- readjust
- finesse
- UPDATE
- Fine-Tune
- ADJUST
- overhaul
- REVISE
- improve
- Finagle
- fiddle
- Patch
- Tune-Up
- push
- focus
- Update

Striking While the Iron is HOT!

Capitalizing on Interest Shown

Be on the look out for news articles that will push your testing capabilities to the forefront of customer minds:

- Flipboard
- Google
- LinkedIn
- Reddit
- Others



News Notifications

No need to get sucked down the rabbit hole –
Let the news come to you

Environmental, Health, Manufacturers, Air Quality (All Facets)

- Sign up for the organization's newsletter
 - Not just the ones you are a part of
- Channel the news feed
 - Fill out the Interested In section
- Get detailed
 - Less is more – Less news leads but will result in quality
- Be keyword savvy
 - Think like your client, take note of how the clients word their requests not how you would

**Relevant
Actionable
News worthy
topics**

**Use them to launch
your content!**

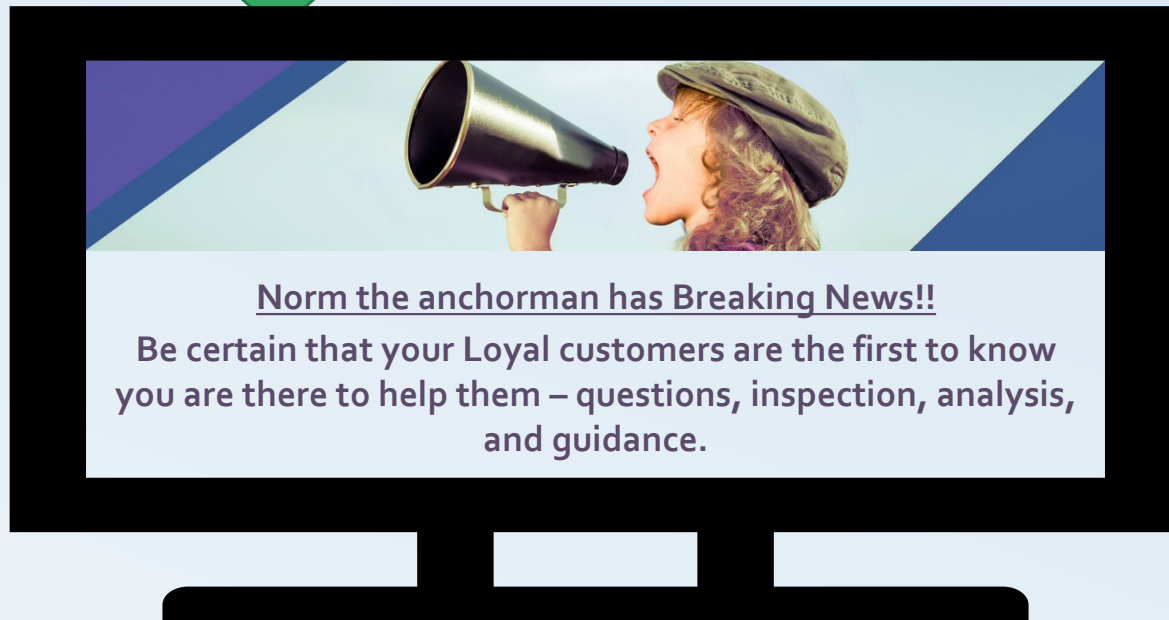
Sign Up and Filter

Flipboard mentions Formaldehyde concern among Housekeeping Staff in hotels.

Post a link to your Newsletter in simplified format on Social Media for a quick reminder that you perform testing for formaldehyde for this relevant topic.

Sally in your Local community FB page or on Reddit just asked if formaldehyde could be in her flooring even if it is not from Lumber Liquidators – she is getting sick.

Reply with a link to your FAQs on Formaldehyde Sources. If there is one concerned others are as well.



Norm the anchorman has Breaking News!!

Be certain that your Loyal customers are the first to know you are there to help them – questions, inspection, analysis, and guidance.

You've Created
the Content –
Don't forget to USE IT!

<http://www.independent.co.uk/life-style/clothes-new-wash-dermatologist-today-show-lice-scabies-formaldehyde-eczema-a8219976.html>

<https://www.woodworkingnetwork.com/news/woodworking-industry-news/epa-issues-final-rule-formaldehyde-testing-composite-panels>

http://www.theadvocate.com/baton_rouge/news/environment/article_147c5c32-1361-11e8-b447-bb2eb8eao45f.html

<https://portcitydaily.com/local-news/2018/02/20/national-gypsum-produced-60-times-more-formaldehyde-than-deq-records-indicate/>

<http://investor.weyerhaeuser.com/2017-07-18-Weyerhaeuser-issues-statement-regarding-TJI-R-Joists-with-Flak-Jacket-R-Protection>

<http://investors.lumberliquidators.com/Lumber-Liquidators-Response-to-60-Minutes-Episode>

News References (slides 7 & 8)

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